



# CAREER AND TECHNICAL EDUCATION

Operational Guide

for

Occupational and Support Programs

July 1, 2005

Summary of Changes in Operational Guide	
February 14, 2005	April 1, 2005
<b>Updated:</b> <ul style="list-style-type: none"> <li>• Course Codes</li> <li>• Equipment Lists</li> </ul>	<b>Added:</b> <ul style="list-style-type: none"> <li>• Pathway - Program of Study Crosswalk</li> <li>• Technology Standards for 2006-07</li> </ul> <b>Rearranged:</b> <ul style="list-style-type: none"> <li>• Technology Standards for Career Guidance Areas</li> </ul>
July 1, 2005	
<b>Corrections:</b>	
• Course Codes	• Pathway Name
<b>Other Issues:</b>	
•	•

Changes (4/1/05)
<b>Course Codes:</b>
Incomplete sentences in numerous course code descriptions are completed.
Description changed for 399170 DWE-Approved Keystone.
Licensure requirements added for 590130 DWE-Approved Career Communications Lab.
Description corrected for 491330 Nursery/Landscaping.
460010 EAST/Workforce Technology added.
<b>Business/Marketing Technology:</b>
Specific Marketing Minimum Equipment List good for 05-06 only.
<b>Career Guidance, Exploration, and Preparation:</b>
Technology Standards 05-06 – Level changes for Career Guidance courses and Arts Cluster.
EAST added to Workforce Technology throughout Career Guidance section.
Equipment lists rearranged throughout Career Guidance section.
Arts Cluster: First paragraph (Programs of study under this cluster include those...) removed.
Rules and Regs Governing Public School Student Services: 8.03 “a form” removed from paragraph.
State Plan for Vocational & Technical Education: 2.2.6 “a phenomenally high percent of the” removed from second paragraph.
Internship Course Description: “The structure <i>includes</i> a strong business partnership that links....”
Internship Course Type: “and worksite instruction, <i>helps</i> students to successfully....”
<b>Family and Consumer Sciences:</b>
Leadership and Service Learning Course code 493160 is added to Options in Culinary Arts; Food Production, Management and Services; Lodging Management.
Changes (7/1/05)
<b>Course Codes:</b>
690030 STRIVE – In the description, PROVE changed to STRIVE.
399010 Information Technology Fundamentals – Licensure added.
<b>Agricultural Science and Technology:</b>
Course names starting with “Agriculture” or “Agricultural” in elective courses; Power, Structural, and Technical Systems Pathway; and prerequisites are corrected to match course codes.
<b>Business/Marketing Technology:</b>
Middle School Elective Courses: Course Code 399180 – Computer Technology Applications replaced by Course Code 399040 – Computer Technology: Intro.
Other Middle School Elective Courses: Course Code 399040 – Computer Technology: Intro replaced by Course Code 399010 – Information Technology: Fundamentals.
<b>Technical and Professional Education:</b>
Health Informatics pathway deleted.
Building Trades changed to Construction Technology in the course codes.
Geographic Info Systems changed to Geospatial Technology.
Drafting and Design – Engineering CAD added to Architecture and Construction cluster.
Geospatial Technology moved from Science, Technology, Engineering, and Math cluster to Architecture and Construction cluster.
Auto Body changed to Automotive Collision Repair in the course codes.

Small Engines changes to Power Equipment Technology in the course codes.
Licensure requirement for DWE-Approved Career and Tech Ed., DWE-Approved Technical and Professional Course, and DWE Approved Technical and Professional Lab changed from ANY to Any Technical & Professional Permit.
Design/Pre-construction Pathway added to Architecture and Construction cluster.
Pathways rearranged through clusters.

## Statement of Assurance

All vocational opportunities are offered without regard to race, color, national origin, sex, handicap, or age. The following civil rights laws protect individuals from discrimination in programs or activities receiving federal financial assistance:

Title IV of the Civil Rights Act of 1964

Title IX of the Education Amendments of 1972

Section 504 of the Rehabilitation Act of 1973

Age Discrimination Act of 1975

**RELATED LINK:** Go to the Department of Labor for assistance with specific laws and regulations,  
<http://www.dol.gov/dol/compliance/compliance-majorlaw.htm>.

Summary of Dates/Forms Associated with Instructional Programs		
Date	Form # and Web Site Address	Name of Form
August 20	<u><a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">WE-APP-242</a></u> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Annual Applications for Apprenticeship State Improvement Funds
August 20	( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipImprovementFunds.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipImprovementFunds.html</a> )	Traditional Apprenticeship: <u><a href="#">Annual Report Memo</a></u> & <u><a href="#">Annual Report Funding Options for Traditional Apprenticeship Program</a></u>
September 3	( <a href="http://dwe.arkansas.gov/CareerandTechEducation/TeacherInformationSystem.htm">http://dwe.arkansas.gov/CareerandTechEducation/TeacherInformationSystem.htm</a> )	Computer submission of <u><a href="#">Teacher Information</a></u>
October 1		Notification by letter of schools using concurrent credit to meet standards
October 1	<u><a href="http://dwe.arkansas.gov/CTESCTENewandExpandedPrograms.htm">WE-92</a></u> ( <a href="http://dwe.arkansas.gov/CTESCTENewandExpandedPrograms.htm">http://dwe.arkansas.gov/CTESCTENewandExpandedPrograms.htm</a> )	C & T New Program Start-up Proposals
November 1	<u><a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">WE-APP-233</a></u> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Class Organization Report for Traditional Apprenticeship-Related Classroom Instruction
November 1	<u><a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">WE-APP-253</a></u> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Local Apprenticeship Committee and Instructors Personnel Record
November 12	( <a href="http://dwe.arkansas.gov/Agriculture/TeacherInfo/ProgramofActivitiesrevised2001.doc">http://dwe.arkansas.gov/Agriculture/TeacherInfo/ProgramofActivitiesrevised2001.doc</a> )	Computer submission of Agriculture Education <u><a href="#">Chapter Program of Activities</a></u>
January 21	<u><a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">WE-APP-236</a></u> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Traditional Apprenticeship-Related Classroom Instruction Reimbursement Request for fall semester

Summary of Dates/Forms Associated with Instructional Programs		
Date	Form # and Web Site Address	Name of Form
January 21	<b>WE-APP-237</b> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Traditional Apprenticeship-Related Classroom Instruction Attendance/Contact Hour Report for fall semester
February 4	( <a href="http://dwe.arkansas.gov/Agriculture/TeacherInfo/SAE_Report02Jan04.xls">http://dwe.arkansas.gov/Agriculture/TeacherInfo/SAE_Report02Jan04.xls</a> )	Computer submission of Agriculture Education <b>Supervised Agriculture Experience Report</b>
February 15 (or 10 days before first contest)		Computer submission of Agriculture Education FFA membership dues
March 1	( <a href="http://dwe.arkansas.gov/Agriculture/TeacherInfo/SuperiorChapterapplicationrevised2001.doc">http://dwe.arkansas.gov/Agriculture/TeacherInfo/SuperiorChapterapplicationrevised2001.doc</a> )	Computer submission of Agricultural Chapter <b>Superior Chapter Report</b>
March 15	<b>WE-4</b> ( <a href="http://dwe.arkansas.gov/CTESCTENewandExpandedPrograms.htm">http://dwe.arkansas.gov/CTESCTENewandExpandedPrograms.htm</a> )	Reimbursement for C & T New Program Equipment
June 1	( <a href="http://dwe.arkansas.gov/Agriculture/TeacherInfo/ANNUALFFAREPORT.doc">http://dwe.arkansas.gov/Agriculture/TeacherInfo/ANNUALFFAREPORT.doc</a> )	<b>Annual FFA Report</b>
June 3	<b>WE-APP-236</b> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Traditional Apprenticeship-Related Classroom Instruction Reimbursement Request for spring semester
June 3	<b>WE-APP-237</b> ( <a href="http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html">http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html</a> )	Traditional Apprenticeship-Related Classroom Instruction Attendance/Contact Hour Report for spring semester
2 weeks prior to beginning of class	<b>WE-6</b> ( <a href="http://dwe.arkansas.gov/CTESCTEReporting%20Forms.htm">http://dwe.arkansas.gov/CTESCTEReporting%20Forms.htm</a> )	Application for Adult Skill Training Class (no classes will be approved after May 1)
No later than 2 weeks after completion of class	<b>WE-PD</b> ( <a href="http://dwe.arkansas.gov/CTESCTEReporting%20Forms.htm">http://dwe.arkansas.gov/CTESCTEReporting%20Forms.htm</a> )	Adult Skill Training Class Enrollment Report (all reimbursement requests must be received by May 30)

**ARKANSAS DEPARTMENT OF WORKFORCE EDUCATION**

Three Capitol Mall  
Little Rock, AR 72201

Web Site Address: <http://dwe.arkansas.gov>

**CAREER AND TECHNICAL EDUCATION**

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**Accountability and Funding**

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Room 407 (501) 682-1528

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Perkins and related federally funded programs  
Career and technical education coordinators

**Occupational Programs:**

Office of **Agricultural Science and Technology**

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Room 501 (501) 682-2561

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Office of **Business/Marketing Technology**

(<http://dwe.arkansas.gov/BusinessMarketing.htm>)

Room 502 (501) 682-1768

Fax: (501) 682-1268

Cluster responsibility: Business, Management, &  
Administration; Finance; Information Technology;  
Marketing, Sales, & Service

Sandra Porter, Program Manager

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Office of **Career Guidance, Exploration, and Preparation**

(<http://dwe.arkansas.gov/CareerGuidExplPrep/CoursesInit.htm>)

Room 409 (501) 682-1616

Fax: (501) 682-9440

Cluster responsibility: Arts, A/V Technology, &  
Communications

Christine Nichols, Program Manager

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Office of **Family and Consumer Sciences Education**

(<http://dwe.arkansas.gov/FACS/FACSIndex.htm>)

Room 408 (501) 682-1115

Fax: (501) 682-9440

Cluster responsibility: Education & Training;  
Hospitality & Tourism; Human Services

Suellen Ward, Program Manager

E-mail: [suellen.ward@arkansas.gov](mailto:suellen.ward@arkansas.gov)

Office of **Technical and Professional Education**

(<http://dwe.arkansas.gov/Tech&ProEd.htm>)

Room 505 (501) 682-1271

Fax: (501) 682-1355

Cluster Responsibility: Architecture & Construction;  
Government & Public Administration; Health Sciences;  
Law, Public Safety, & Security; Manufacturing; Science,  
Technology, Engineering, & Mathematics; Transportation,  
Distribution, & Logistics

(<http://dwe.arkansas.gov/HOSA/index.html>);

(<http://dwe.arkansas.gov/skills.htm>);

Dick Burchett, Program Manager

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**Program Support:**

Office of **Apprenticeship**

(<http://dwe.arkansas.gov/Apprenticeship/apprenticeshipindex.html>)

Room 506 (501) 682-1360

Fax: (501) 682-1355

Don Havens, Program Manager

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Issues of:

- Adult apprenticeship
- Construction training

Office of **Assessment and Curriculum**

(<http://dwe.arkansas.gov/SCT/Index.htm>)

Room 402.1 (501) 682-1042

Fax: (501) 682-1805

Karen Chisholm, Program Manager

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Issues of:

- Curriculum revision and development
- Program evaluation
- Program planning
- Student assessment and accountability

Office of **Career Guidance, Exploration, and Preparation**

(<http://dwe.arkansas.gov/CareerGuidExplPrep/CoursesInit.htm>)

Room 409 (501) 682-1616

Fax: (501) 682-9440

Christine Nichols, Program Manager

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Issues of:

- Career awareness
- Career counselor inservice
- Career focus and pathways
- Career planning

Courses/Classes:

- Career Orientation
- EAST/Workforce Technology
- Internships
- Keystone
- Senior Seminar
- Workplace Readiness

Office of [School Improvement](http://dwe.arkansas.gov/officeschoolimprovement.htm)  
(<http://dwe.arkansas.gov/officeschoolimprovement.htm>)

Room 403.1 (501) 682-1535

Fax: (501) 682-1805

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Issues of:

- Charter schools
- Contextual learning
- Curriculum integration
- Distance learning
- Postsecondary articulations
- Private schools
- Teacher education programs

Support Programs:

- Career Academy Initiative
- *High Schools That Work*
- Tech Prep
- Youth Apprenticeship

Office of [Support for Special Populations](http://dwe.arkansas.gov/CTESCTEGuidanceSpecialneeds.htm)  
(<http://dwe.arkansas.gov/CTESCTEGuidanceSpecialneeds.htm>)

Room 401 (501) 682-1800

Fax: (501) 682-1805

Teresa Dow, Program Manager

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Issues of:

- Nontraditional services
- Equity and accessibility
- Special needs
- Adaptive equipment

Courses:

- Jobs for Arkansas' Graduates
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## PROGRAM APPROVAL PROCESS

If a program was **conditionally approved** during the previous year and one of the following actions apply the following year, then the district will receive the program status indicated.

ACTION	STATUS TO RECEIVE
Problems are corrected	<b>FULL APPROVAL</b>
Problems not corrected	Disapproval
Critical elements from previous year received, and improvement plan not submitted	Disapproval

If a program had **full approval** during the previous year and one of the following actions apply the following year, then the district will receive the program status indicated.

ACTION	STATUS TO RECEIVE
No CTSO previous year	Conditional Approval
No program of study	Conditional Approval
No required foundations (reviewed by appropriate program area)	Conditional Approval
Core not offered every year	Conditional Approval
Meets all DWE standards	<b>FULL APPROVAL</b>

Program approval items reviewed during technical assistance visits and as information is available:

1. All report card items
  - A. Completers
  - B. Career and technical assessment
  - C. Academic attainment
  - D. Placement
  - E. Nontraditional numbers
2. Advisory councils and meeting minutes
3. Safety issues
4. Any item noted as lacking in technical assistance visit

<b>CAREER CLUSTER PATHWAY – PROGRAM OF STUDY CROSSWALK</b>	
<b>2004-05 Program of Study Name</b>	<b>2005-06 Pathway – Program of Study Name</b>

### **Agricultural Science and Technology**

#### ***Cluster: AGRICULTURE, FOOD, & NATURAL RESOURCES***

Agribusiness Systems	Agribusiness Systems
Agricultural Mechanics	Power, Structural, & Technical Systems - Agri Mechanics
Agricultural Science - Animal	Animal Systems - Agricultural Science/Animal
Agricultural Science - Plant Sciences	Plant Systems - Agricultural Science/Plant
Horticulture	Plant Systems - Horticulture
Natural Resources/Environmental Service Systems	Natural Resources/Environmental Service Systems

### **Business/Marketing Technology**

#### ***Cluster: BUSINESS, MANAGEMENT & ADMINISTRATION***

Business Administration/Office Administration	Administration & Information Support/Office Administration
Business Administration/Management	Management - Business Administration/Management

#### ***Cluster: FINANCE***

Banking	Banking & Related Services - Banking
Finance	Business & Financial Management - Finance

#### ***Cluster: HOSPITALITY AND TOURISM***

Tourism	Travel & Tourism – Hospitality
Lodging	Travel & Tourism - Lodging

#### ***Cluster: INFORMATION TECHNOLOGY***

Information Management/Desktop Publishing	Interactive Media - Information Management/Desktop Publishing
Information Management/Multimedia	Interactive Media - Information Management/Multimedia
Information Management/Programming	Programming/Software Engineering - Information Mgmt/Programming
Programming	Programming/Software Engineering - Oracle

#### ***Cluster: MARKETING, SALES, & SERVICE***

Marketing	Marketing Information Management & Research – Marketing Tech
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### **Family & Consumer Sciences Education**

#### ***Cluster: EDUCATION AND TRAINING***

(04-05 - no program of study)	Teaching & Training – Education & Training
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#### ***Cluster: HOSPITALITY AND TOURISM***

(04-05 No program of study)	Restaurant & Food and Beverage Services – Culinary Arts
Food Production, Management, & Services	Restaurant & Food and Beverage Services - Food Production
Facilities Management, Maintenance, & Services	Lodging – Lodging Management

#### ***Cluster: HUMAN SERVICES***

Child Care Guidance, Management, & Services	Early Childhood Development & Services - Child Care
Cosmetology	Personal Care Services - Cosmetology
Family & Consumer Sciences Education	Family & Community Services - Family & Consumer Sciences Ed.

<b>CAREER CLUSTER PATHWAY – PROGRAM OF STUDY CROSSWALK</b>	
<b>2004-05 Program of Study Name</b>	<b>2005-06 Pathway – Program of Study Name</b>

### **Technical & Professional Education**

#### ***Cluster: ARCHITECTURE & CONSTRUCTION***

Construction Technology	Construction - Construction Technology
HVACR	Construction - HVACR
Drafting and Design	Design/Pre Construction – Drafting & Design Architectural CAD
Geographic Information Systems	Design/Pre Construction – Geospatial Technology

#### ***Cluster: GOVERNMENT & PUBLIC ADMINISTRATION***

JROTC	National Security - JROTC
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#### ***Cluster: HEALTH SCIENCES***

Medical Professions Education	Therapeutic Services – Medical Professions Ed
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#### ***Cluster: LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY***

Criminal Justice	Law Enforcement Services - Criminal Justice
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#### ***Cluster: MANUFACTURING***

Industrial Equipment Maintenance	Maintenance, Installation, & Repair - Industrial Equip Maintenance
Major Appliance Repair	Maintenance, Installation, & Repair - Major Appliance Tech
Furniture Manufacturing	Production – Furniture Manufacturing
Machine Tool Technology	Production - Machine Tool
Welding	Production - Welding

#### ***Cluster: SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS***

Drafting & Design	Engineering & Technology - Drafting & Design Engineering CAD
Computer Engineering	Engineering & Technology - Computer Engineering
Electronics	Engineering & Technology - Electronics
Pre-engineering	Engineering & Technology - Pre-engineering

#### ***Cluster: TRANSPORTATION, DISTRIBUTION, & LOGISTICS***

Automotive Collision	Facility & Mobile Equipment Maintenance - Auto Collision
Automotive Service Technology	Facility & Mobile Equipment Maintenance - Auto Service Tech
Aviation Mechanics	Facility & Mobile Equipment Maintenance - Aviation
Diesel Mechanics	Facility & Mobile Equipment Maintenance - Diesel Mechanics
Power Equipment Technology	Facility & Mobile Equipment Maintenance - Power Equipment Tech.

### **Arts & A-V Technology**

<b>CAREER CLUSTER PATHWAY – PROGRAM OF STUDY CROSSWALK</b>	
<b>2004-05 Program of Study Name</b>	<b>2005-06 Pathway – Program of Study Name</b>
<b><i>Cluster: ARTS, A-V TECHNOLOGY, &amp; COMMUNICATIONS</i></b>	
Advertising Design	Visual Arts - Advertising Design
Career Communications/Visual Arts	Visual Arts - Career Communications
Commercial Photography	Visual Arts - Commercial Photography
Graphic Communications	Printing Technology – Career Communications
Graphic Communications	Printing Technology - Graphic Communications
Career Communications/Journalism & Broadcasting	Journalism & Broadcasting - Career Communications
Radio/TV Broadcasting	Journalism & Broadcasting - Radio/TV Broadcasting
Career Communications/Audio & Video Technology & Film	Audio-Video Communications Technology - Career Communications
Career Communications/Performing Arts	Performing Arts - Career Communications

## 2005-06 Career and Technical Course Codes

### **CLUSTER: AGRICULTURE, FOOD, & NATURAL RESOURCES (all pathways)**

#### **491010 Advanced Animal Science**

Credit: .5 Grade Levels: 9-12

This course is designed at the local level for specialized instruction as determined by the local advisory committee and administration in a specific area of animal science. Pre-requisites would be animal science.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

#### **491020 Agricultural Apprenticeship/Work-Based Learning**

Credit: 1 Grade Levels: 11-12

This course provides for the work-based component of a supervised agriculture experience program with an agriculture employer. It provides the experiential learning concepts that are needed for successful employment.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

#### **491030 Agricultural Business**

Credit: .5 Grade Levels: 9-12

This course provides students with a basis for making effective decisions, setting goals, assessing and solving problems, evaluating the management of resources, and gaining skills useful in everyday life. FFA and SAEs will be covered as well.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

#### **491040 Agricultural Electricity**

Credit: .5 Grade Levels: 9-12

Students will cover electrical terms, careers, sources, tools, and practical wiring. Students will learn to read plans and wire according to plan. They will use hands-on activities and safety will be stressed.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

#### **491050 Agricultural Graphics**

Credit: .5 Grade Levels: 9-12

Students will prepare and read plans related to agricultural projects. They will learn to draw using hand drawing equipment, mechanical equipment, and computer-aided equipment/software. This course has a large amount of hands-on activities.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491060 Agricultural Marketing**

Credit: .5 Grade Levels: 9-12

This course will cover all aspects of marketing agricultural products and services from wholesale to retail, including futures markets, international marketing, and the role of agricultural products and services in the U.S. and world economies.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology
604	Horticulture
605	Forestry

**491070 Agricultural Metals I**

Credit: .5 Grade Levels: 9-12

This course covers safety, technical information, tool fitting, sheet metal, hot and cold metal work, as well as an introduction to oxyacetylene welding and cutting and arc welding. Safety practices and performance skills will be emphasized in each area.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology

**491080 Agricultural Metals II**

Credit: .5 Grade Levels: 9-12

This course will cover cold metal, hot metal, fabrication concepts, reading and implementing blueprints as they relate to metal work, arc welding, gas welding, MIG welding, TIG welding, plasma cutting, and careers related to metal work. Safety will be emphasized.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology

**491090 Agricultural Surveying**

Credit: .5 Grade Levels: 9-12

This is a one-semester course of land surveying, land description, and construction. Surveying also covers GPS, GIS, FFA, and SAE.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology
605	Forestry

**491100 Agriculture Mechanics I**

Credit: .5 Grade Levels: 9-12

This course connects scientific principles with mechanical skills. This course will enhance the student's understanding of traditional areas of agriculture mechanics.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology

**491110 Agriculture Mechanics II**

Credit: .5 Grade Levels: 9-12

This course will emphasize agricultural technology, including such topics as electricity, internal combustion engines, metal technology, construction, and the development, role, and scope of mechanical technology in agriculture.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
218	Agricultural Sciences & Technology

**491120 Agriculture Power Systems I**

Credit: .5 Grade Levels: 9-12

This course covers the basic principles of agricultural power (electrical and internal combustion), maintenance and repair of equipment, career opportunities, and safety.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491130 Agriculture Power Systems II**

Credit: .5 Grade Levels: 9-12

This course is a follow-up course to Ag Power Systems I. It will focus on the technical areas of maintenance and repair of small engines, control and installation of electrical power, electronics, and repair and maintenance of agricultural machinery.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491140 Agriculture Science**

Credit: .5 Grade Levels: 9-12

This is a foundation course for all agriculture programs of study. Topics covered include general agriculture, FFA, leadership, record keeping, Supervised Agriculture Experiences, animal science, and plant science.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

**491150 Agriculture Science & Technology**

Credit: 1 Grade Levels: 9-12

This is a foundation course for all agriculture programs of study. Topics covered include general agriculture, FFA, leadership, record keeping, Supervised Agricultural Experiences (SAEs), animal science, plant science, soil science, and agricultural mechanics.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
217 Agricultural Sciences & Technology  
218 Agricultural Sciences & Technology

**491160 Agriculture Structural Systems I**

Credit: .5 Grade Levels: 9-12

Students will be introduced to basic practices used in farm building and construction of facilities for the farm. Topics include FFA, SAEs, safety, planning, tools, basic construction, and surveying.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491170 Agriculture Structural Systems II**

Credit: .5 Grade Levels: 9-12

This course is a follow-up to Ag Structures I. A more in-depth look will be given to the technical areas of the agriculture structural industry. Topics will include FFA, SAEs, safety, concrete and masonry structures, basic carpentry, plumbing, electricity, metal fabrication, and painting and finishing.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology



**491180 Animal Science**

Credit: .5 Grade Levels: 9-12

Topics covered in Animal Science include animal biotechnology, animal behavior, classification, consumer concerns, animal welfare, genetics, scientific selection, reproduction, growth and development, nutrition, meat science, and diseases.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491190 Aquaculture**

Credit: .5 Grade Levels: 9-12

This course is the science of water farming. It includes the production and marketing of aquatic animals and plants.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491200 Biological Animal Science**

Credit: .5 Grade Levels: 9-12

This course is a scientific approach to animal science using scientific principles and applied management practices. An emphasis on selection and industry review will be based on scientific data.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491210 Biological Plant Science**

Credit: .5 Grade Levels: 9-12

This course is a scientific approach to plant science using scientific principles and applied management practices. An emphasis on selection and industry review will be based on scientific data.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

**491370 DWE-Approved Agriculture**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in agriculture submitted by the district.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**590050 DWE-Approved Agriculture**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in agriculture submitted by the district.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491320 DWE-Approved Meat Processing Laboratory**

Credit: 1 Grade Levels: 9-12

This laboratory-specific course is designed to develop skill in the slaughter and processing of animals. The course emphasizes safety, sanitation, equipment care and maintenance, slaughter procedures, wholesale and retail meat fabrication, meat quality including quality and yield grade, preparation, and merchandising trends. Instruction will include career opportunities, leadership activities, aspects of HASSIP, and other practices related to the meat-packing industry. Districts desiring to implement this course should request approval from the Agriculture Education Office.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491220 Entrepreneurship**

Credit: .5 Grade Levels: 9-12

The course includes the ownership and management of a business to meet the market needs and make a profit. Risk management, ownership, partnership, and marketing are key aspects.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

**491230 Environmental Resources**

Credit: .5 Grade Levels: 9-12

This course focuses on environmental concerns related to soil, air, and water. Emphasis is placed on soil and water in relation to agricultural processes. Students will also investigate ways to conserve soil and water and prevent contamination.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
605 Forestry

**491240 Floriculture**

Credit: .5 Grade Levels: 9-12

This course covers the principles of design, merchandising, careers, selection, storage, supplies, management practices, ownership, and employment in the floriculture industry.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture

**491250 Food Science Technology**

Credit: .5 Grade Levels: 9-12

This course examines the food industry in production, manufacturing/processing, distribution, and marketing. It also explores careers, consumer consumption, food safety, global commodities, and food companies.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology

**491260 Forestry**

Credit: .5 Grade Levels: 9-12

This course provides an overview of the forest industry and its importance to the economy of the nation. Tree identification, management practices, harvesting and marketing processes, and business applications are major topics. GPS and GIS are included.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
605 Forestry

**491270 Greenhouse Management**

Credit: .5 Grade Levels: 9-12

This course covers greenhouse management practices, including structural considerations, plant propagation, pesticide use, and product marketing. The student will also receive ample hands-on practice.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture

**491280 Intro to Horticultural Science**

Credit: .5 Grade Levels: 9-12

This course covers basic plant systems, pest control, and the areas of greenhouse management, nursery and landscaping, and turf management. This course is recommended for those students interested in the horticulture program of study.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture

**491300 Leadership & Communications**

Credit: .5 Grade Levels: 9-12

Public speaking, parliamentary procedure, organization, delegation, oral communication, conflict resolution, business etiquette, and community service are major topics to assist students in development of their leadership skills for the future.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

**491310 Managing Our Natural Resources**

Credit: .5 Grade Levels: 9-12

Students will explore natural resources (soil, water, air, forests, energy, minerals and metals, and wildlife) and develop the knowledge and skills to use them wisely. Other issues include outdoor recreation, careers, and the environment.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
605 Forestry

**491330 Nursery/Landscape**

Credit: .5 Grade Levels: 9-12

This course covers the production of plants, shrubs, and ornamental trees for transplanting to landscape designs. Propagation, designing plans, installation, maintenance, transportation, and careers are included in the curriculum. This course is approved for the Centerpoint School District only. Other districts must request approval prior to implementation.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture

**491340 Plant Science**

Credit: .5 Grade Levels: 9-12

This course covers the relationship between plants and people, plant morphology and physiology, plant production, the environment, soil, and other related areas.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 010 Agriculture  
218 Agricultural Sciences & Technology  
604 Horticulture  
605 Forestry

**491350 Small Engine Technology**

Credit: .5 Grade Levels: 9-12

This course examines the uses of small engines in all areas of agriculture. Selection, maintenance and repair, careers, and employability are major topics.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	010	Agriculture
	218	Agricultural Sciences & Technology
	604	Horticulture
	605	Forestry

**491360 Turf Grass Management**

Credit: .5 Grade Levels: 9-12

This course covers all aspects of turf grass management, including lawn care, turf production, golf course management, sports turf, irrigation, equipment, maintenance, and human relations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	010	Agriculture
	218	Agricultural Sciences & Technology
	604	Horticulture

## **CLUSTER: ARCHITECTURE & CONSTRUCTION**

### **Construction Technology**

#### **494450 Bricklaying**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in the laying and/or setting of brick, concrete block, hard tile, marble, and related materials, using trowels, levels, hammers, chisels, and other hand tools.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494460 Carpentry**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to lay out, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494470 Concrete Masonry**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in placing and finishing concrete.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494480 Construction Fundamentals**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in the building, inspecting, and maintaining of structures and related properties.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494490 Drywall**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills in installing and finishing drywall.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494500 Electrical**

#### **494500 Electrical**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to install and repair residential electrical systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

#### **494510 Plumbing**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to lay out, assemble, install, and maintain piping fixtures and piping systems, hot water, heating, cooling, and drainage systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 570 Construction Technology

## **Drafting & Design**

### **494700 Drafting & Design**

Credit: 1 Grade Levels: 9-12

Drafting & Design focuses on the basic knowledge and skills required to produce engineering and architectural drawings. Emphasis is given to the development of competencies related to the use of drafting equipment, the production of beginning level engineering drawings, and the production of beginning level architectural drawings.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 575 Drafting and Design

### **494710 Architecture/CADD I**

Credit: 1 Grade Levels: 9-12

Architecture/CADD I focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical thinking skills. The course is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 575 Drafting and Design

### **494730 Architecture/CADD II**

Credit: 2 Grade Levels: 10-12

Architecture/CADD II focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical thinking skills. The course is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 575 Drafting and Design

### **494720 Architecture/CADD Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive architectural product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 575 Drafting and Design

## **Geospatial Technology**

### **494910 GIS & Remote Sensing**

Credit: .5 Grade Levels: 9-12

Skill-based training in GIS & Remote Sensing is a one-semester course designed to introduce students to the use of ArcView GIS software and software extensions through academic study and extensive applied instruction. Students will be introduced to terminology and concepts relating to ArcView GIS software and will apply these concepts through the use of industry-standard software.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 607 Geospatial Technology

### **494900 Intro to GIS**

Credit: .5 Grade Levels: 9-12

Introduction to GIS/Remote Sensing is a one-semester course designed to introduce students to geographic information systems (GIS) and remote sensing (RS) technology through academic study and applied instruction. Students will be introduced to terminology and concepts relating to GIS/RS technology and will apply these concepts through the use of GIS software programs. Students will participate in structured, applied learning exercises taken from existing data sources, as well as conduct new study of these data sources through self-driven study and analysis.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 607 Geospatial Technology

**494920 SPACE**

Credit: 1 Grade Levels: 11-12

The purpose of this class is to provide students with advanced instruction in geographic information systems (GIS) and remote sensing (RS) technology through focused academic study and continued emphasis on applied instruction that began in the Year 2 class. While the Year 2 GIS/RS project had a small scope that was limited to the school environment, this class will provide emphasis placed on special geographic projects dealing with the local community environment that will be planned, conducted, and presented by the student, with guidance from community/industry mentors. Students will identify a community problem or situation that may be addressed using GIS/RS technology; interview necessary residents/community personnel relevant to the situation; identify and/or collect data needed for the project; perform necessary analyses; and present findings to peers, school personnel, and community stakeholders. Within the study parameters of the school-community partnership, students will gain relevant "hands-on," industry-specific experience and valuable career guidance information that will aid the student in either the continuing education or job placement environments.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 607 Geospatial Technology

**494930 STARS**

Credit: 1 Grade Levels: 10-12

Spatial Technology and Remote Sensing (STARS) is a one-year course designed to provide students with continued instruction in geographic information systems (GIS) and remote sensing (RS) technology. Students will receive instruction and guidance from the instructor acting in a facilitator capacity on topics including skill building in industry-standard geospatial extension software and geospatial tools, including global positioning systems (GPS), and continued training in GIS project management and problem solving. Each student will participate in applied-learning activities with emphasis placed on planning, conducting, and presenting three special projects dealing with the use of GIS/RS tools and data in various career cluster groups that deal with the immediate school environment. In addition to formally presenting projects to peers, school administration, and other interested parties, students will be encouraging these entities to use their solutions to improve the local environment.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 607 Geospatial Technology

**HVACR****495100 HVACR I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to repair, install, service, and maintain the operating condition of heating, air conditioning, and refrigeration systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 578 HVACR

**495110 HVACR II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to repair, install, service, and maintain the operating condition of heating, air conditioning, and refrigeration systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 578 HVACR

## **CLUSTER: ARTS, A-V TECHNOLOGY, & COMMUNICATIONS**

### **493720 DWE-Approved Introduction to Career in Arts, Audio-Video Technology, and Communications**

Credit: .5 Grade Levels: 9-12

This is a core course for a program of study in the Arts, Audio-Video Technology, and Communications cluster. It is a one-semester course that addresses the foundation skills required of all careers classified under the AAVTC cluster, including pathways in Audio and Video Technology and Film; Printing Technology; Visual Arts; Performing Arts; and Journalism and Broadcasting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

020	Art K-12
032	Business Education
036	Business Education (Voc Fund)
124	Vocal K-12
125	Instrumental K-12
166	English/Language Arts
202	Art
208	Drama/Speech
225	Business Technology
613	Performing Arts Permit

### **690020 DWE-Approved Photojournalism**

Credit: 1 Grade Levels: 10-12

The course will focus on teaching basic skills and knowledge needed by photojournalists.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 602 Commercial Photography

### **Advertising Design**

#### **494150 Advertising Design I**

Credit: 1 Grade Levels: 9-12

This instructional program in the applied visual arts prepares individuals to use artistic techniques to effectively communicate ideas and information to business and consumer audiences via illustrations and other forms of printed media.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 571 Advertising Design

#### **494170 Advertising Design II**

Credit: 2 Grade Levels: 10-12

This course emphasizes the integration of computer skills and knowledge of software used in the market place. Instruction includes silk screen, airbrush, and market theories.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 571 Advertising Design

#### **494160 Advertising Design Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive advertising design product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 571 Advertising Design



## **Career Communications**

### **493730 DWE-Approved Career Communications I**

Credit: 1 Grade Levels: 9-12

This is a core course for a career major in the program of study called career communications. It is a yearlong course that will cover topics addressed as the basic knowledge and skills areas in the AAVTC career cluster. These topics include skills in academic foundations; communications; problem solving and critical thinking; information technology applications; systems, safety, health, and environmental issues; leadership and teamwork; ethics and legal responsibilities; and employability and career development. When students complete this course, they will have the necessary knowledge and skills to function in leadership roles in the production of local media releases, including videos, papers, magazines, and annuals.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

020	Art K-12
032	Business Education
036	Business Education (Voc Fund)
166	English/Language Arts
202	Art
208	Drama/Speech
225	Business Technology

### **493740 DWE-Approved Career Communications II**

Credit: 1 Grade Levels: 9-12

This is a core course for a career major in the program of study called career communications. It is a yearlong course that will cover topics addressed as the knowledge and skills areas in the journalism pathway of the AAVTC career cluster. Instruction will build upon the knowledge and skills learned in Career Communications I. When students complete this course, they will have the necessary knowledge and skills to participate local community internship positions in the areas related to print and/or broadcast media productions.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

020	Art K-12
032	Business Education
036	Business Education (Voc Fund)
166	English/Language Arts
202	Art
208	Drama/Speech
225	Business Technology

### **590130 DWE-Approved Career Communications Lab**

Credit: 1 Grade Levels: 10-12

The Career Communications Lab is project-based instruction and is an extension of the career communications program of study. It provides classroom training and instruction for the advanced student that is over and above the basic course requirement. The content builds on the knowledge, skills, and abilities taught in Career Communications I and II. The Career Communications Lab may be used in order for students to achieve completer status (as a substitute for an internship or senior seminar experience) when these courses are not available. Students must have completed Career Communications I and II prior to enrollment in the Career Communications Lab.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

020	Art K-12
032	Business Education
036	Business Education (Voc Fund)
166	English/Language Arts
202	Art
208	Drama/Speech
225	Business Technology

## **Commercial Photography**

### **494350 Commercial Photography I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to use artistic techniques to effectively communicate ideas and information to business and consumer audiences and record events and people via film and still and video photography.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 602 Commercial Photography

### **494370 Commercial Photography II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to use artistic techniques to effectively communicate ideas and information to business and consumer audiences and record events and people via film and still and video photography.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 602 Commercial Photography

### **494360 Commercial Photography Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive commercial photography product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 602 Commercial Photography

## **Graphic Communications**

### **495010 Electronic Imaging**

Credit: 1 Grade Levels: 9-12

This course provides an overview of basic typography, layout design, desktop publishing, and operating. It requires production of visuals using electronic illustrations and text.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

### **495030 Finishing/Binding**

Credit: 1 Grade Levels: 9-12

This course provides an overview of information pertaining to finishing and binding. A series of related tasks and simulations are infused to build entry-level skills.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

### **495020 Fundamentals of Graphic Communications**

Credit: 1 Grade Levels: 9-12

This course provides an overview of the printing industry, its basic operations, and career opportunities.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

### **495040 Image Assembly & Platemaking**

Credit: 1 Grade Levels: 9-12

Basic image assembly and construction, as well as platemaking techniques, are presented in this course. This course is directed at building entry-level skills. Topics and techniques include assembly construction techniques for single and multicolor work, step and repeat, imposition layout, and daylight contacting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

**495050 Offset Press Operation**

Credit: 1 Grade Levels: 9-12

This course provides an overview of offset duplicator operation through a series of tasks and simulations that build entry-level skills.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

**495060 Reproduction Photography**

Credit: 1 Grade Levels: 9-12

This course builds entry-level skills and knowledge for the reproduction photography area through a series of progressive exercises that cover the basics of camera and darkroom operations. Learning activities include film exposure of processing techniques, materials, operations, and safety practices.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 582 Graphic Communication

**Performing Arts****495920 DWE-Approved Performing Arts I**

Credit: 1 Grade Levels: 9-12

This course is designed to teach students interested in pursuing careers in the performing arts with an emphasis on dance, music, theater/playwriting, or technical design and production. Students will be taught basic academic and performance skills related to the designated topic and demonstrate an ability and understanding of the skills and academic requirements needed for a career in their chosen area of the performing arts. Based on the individual school request and submission of DWE-approved frameworks, course approval will be given for instruction in one or more of the following topics: dance, music, theater and playwriting, or technical design and production.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 124 Vocal K-12  
125 Instrumental K-12  
208 Drama/Speech  
613 Performing Arts Permit

**495930 DWE-Approved Performing Arts II**

Credit: 1 Grade Levels: 9-12

This course is designed to teach students interested in pursuing careers in the performing arts with an emphasis on dance, music, theater/playwriting, or technical design and production. Students will be taught advanced academic and performance skills related to the designated topic and demonstrate an ability and understanding of the skills and academic requirements needed for a career in their chosen area of the performing arts. Based on the individual school request and submission of DWE-approved frameworks, course approval will be given for instruction in one or more of the following topics: dance, music, theater and playwriting, or technical design and production.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 124 Vocal K-12  
125 Instrumental K-12  
208 Drama/Speech  
613 Performing Arts Permit

**590120 DWE-Approved Performing Arts Lab**

Credit: 2 Grade Levels: 9-12

This course is designed to teach students interested in pursuing careers in the performing arts with an emphasis on dance, music, theater/playwriting, or technical design and production. The lab will be used for advanced academic and performance skills training in the designated topic. Students will demonstrate advanced ability and understanding of the skills and academic requirements needed for a career in their chosen area of the performing arts. Based on the individual school request and submission of DWE-approved frameworks, course approval will be given for instruction in one or more of the following topics: dance, music, theater and playwriting, or technical design and production.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 124 Vocal K-12  
125 Instrumental K-12  
208 Drama/Speech  
613 Performing Arts Permit

**495500 Radio/TV Broadcasting I**

Credit: 1 Grade Levels: 9-12

The program is designed to give practical knowledge in preparation for the pursuit of a career in broadcasting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 591 Radio  
595 Television

**495510 Radio/TV Broadcasting Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive radio/TV broadcasting production.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 591 Radio  
595 Television

**Radio/TV Broadcasting****495520 Radio Broadcasting II**

Credit: 2 Grade Levels: 10-12

This program is designed to give practical knowledge in preparation for the pursuit of a career in radio broadcasting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 591 Radio

**495530 TV Broadcasting II**

Credit: 2 Grade Levels: 10-12

The course will provide a fundamental understanding of production principles and experience with the video camera, lighting instruments and techniques, microphones, script creation, and basic editing. Students will perform assignments on camera as well as studio and control room duties.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 595 Television

**CLUSTER: BUSINESS MANAGEMENT & ADMINISTRATION; FINANCE;  
and INFORMATION TECHNOLOGY (all pathways)**

**492020 Banking & Finance Consumer Lending**

Credit: .5 Grade Levels: 11-12

Banking and Finance Marketing is a one-semester course that focuses on marketing in the banking industry. Emphasis is placed on customer satisfaction and service quality, implementation of marketing plans, and the future of bank marketing.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492030 Banking & Finance Law**

Credit: .5 Grade Levels: 11-12

Banking and Finance Law is a one-semester course that assists the student in understanding the legal environment in which depository institutions exist. Students study basic concepts in business law in the areas of contract law, agency law, property law, commercial paper law, and credit law. This curriculum is adopted from Wisconsin Finance Youth Apprenticeship, Wisconsin Department of Industry, Labor, and Human Relations, Bureau of Apprenticeship Standards, Office for Workforce Excellence.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492040 Banking & Finance Operations/Teller Training**

Credit: .5 Grade Levels: 11-12

Banking and Finance Operations is a one-semester course that assists the student in understanding the United States payment system and daily operations of depository institutions. Students study regulatory framework, the U.S. payment system, the check collection system, money creation, internal controls, financial statements, and risks. This curriculum is adapted from Wisconsin Finance Youth Apprenticeship, Wisconsin Department of Industry, Labor, and Human Relations, Bureau of Apprenticeship Standards, Office for Workforce Excellence.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492050 Banking & Finance Principles**

Credit: .5 Grade Levels: 11-12

Banking and Finance Principles is a one-semester course that assists the students in understanding the American banking system. Students study the Federal Reserve System, banking and the economy, functions of depository institutions, and daily transactions of depository institutions. This curriculum is adopted from Wisconsin Finance Youth Apprenticeship, Wisconsin Department of Industry, Labor, and Human Relations, Bureau of Apprenticeship Standards, Office for Workforce Excellence.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492060 Business Communications**

Credit: .5 Grade Levels: 10-12

Business Communications is a one-semester course designed to provide students with the communication skills needed in business careers. The course includes both written and oral communications relating to business activities and is directed toward understanding the language of nonverbal communication and improved listening skills, reading, voice usage, and writing skills. Emphasis is given to developing competencies in fundamentals, such as spelling, punctuation, grammar, vocabulary, sentence and paragraph structure, English usage, and proofreading. Applications in writing all types of business documents are valuable components of the course. Students gain competencies in writing, thinking logically, organizing ideas, writing clearly and concisely, and displaying tact and courtesy in writing. Technological advancements relating to information, communication, and telecommunications are given emphasis.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	225	Business Technology

**492070 Business Law I**

Credit: .5 Grade Levels: 11-12

Business Law I is a one-semester course designed to acquaint the student with some of the legal problems and rights encountered in business transactions. This course will include law and the judicial system; laws relating to minors, consumers, and the business firm; elements of contracts; credit; sales contracts; employment laws; commercial paper; insurance; and property rights.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	225	Business Technology

**492080 Business Law II**

Credit: .5 Grade Levels: 11-12

Business Law II is a one-semester course designed to acquaint the student with some of the legal problems and rights encountered in business transactions. This course will include law and the judicial system; laws relating to minors, consumers, and the business firm; elements of contracts; credit; sales contracts; employment laws; commercial paper; insurance; and property rights.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	225	Business Technology

**492100 Computerized Accounting I**

Credit: 1 Grade Levels: 10-12

Computerized Accounting I is a two-semester course with emphasis on basic accounting principles as they relate to both manual and computerized financial systems. Instruction is on an integrated basis using computers and electronic calculators as the relationships and processes of manual and computerized accounting are presented. Entry-level skills in the accounting occupations can be attained.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	225	Business Technology

**492110 Computerized Accounting II**

Credit: 1 Grade Levels: 11-12

Computerized Accounting II is a two-semester course designed to provide students with the knowledge, understanding, and skill necessary for successful careers in accounting. Partnership as well as departmental, corporate, and cost accounting systems are components of the course. Emphasis is given to the computerized/automated functions in accounting.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	225	Business Technology

**492120 Computerized Business Applications**

Credit: 1 Grade Levels: 9-12

Computerized Business Applications is a two-semester course designed to prepare students with an introduction to business applications that are necessary to live and work in a technological society. Emphasis is given to hardware, concepts, and business uses of applications. The business applications covered are word processing, database, spreadsheet, telecommunications, presentation, and Web page design. This course will also meet the one unit required in the Standards for Computer Applications.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492140 Database Applications**

Credit: .5 Grade Levels: 10-12

Database Management is a one-semester course in which students learn to organize data; create, search, and query databases; and use integrated software to combine database with word processing and mail merge.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492560 Database Fundamentals – Oracle Internet Academy**

Credit: .5 Grade Levels: 11-12

The data modeling course is largely conceptual in that students are challenged to identify patterns or connections between information that is not obviously related and to identify key or underlying issues in complex situations. Student activities are designed to include using creative, conceptual, and inductive reasoning. Students learn how to transform business information needs into entity relationship diagrams and, later, into a relational database.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492570 Database Programming – Oracle Internet Academy**

Credit: .5 Grade Levels: 11-12

This course enables users to build data warehouses and data marts; perform an array of integrated reporting; conduct ad-hoc querying and sophisticated analysis, including database optimization and maintenance, forecasting and trending, and market analysis; provide extended database support for online analytical processing, data-mining, and extraction; and perform transformation and loading operations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492150 Desktop Publishing I**

Credit: .5 Grade Levels: 10-12

Desktop Publishing I is a one-semester course that combines the versatility of the microcomputer with page design software, enabling students to produce materials of near photo quality. The course includes page composition, layout, design, editing functions, and a variety of printing options.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	037	Computer Tech Permit
	225	Business Technology

**492160 Desktop Publishing II**

Credit: .5 Grade Levels: 10-12

Desktop Publishing II is a one-semester course designed to study the process of analyzing information and audience and choosing the appropriate visual signals to communicate the desired message effectively. Applied principles are used to analyze and organize information, set up a design structure, and produce special visual expressions.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	037	Computer Tech Permit
	225	Business Technology

**492530 DWE-Approved Advanced Database and Spreadsheets**

Credit: .5 Grade Levels: 11-12

Students learn advanced techniques in both spreadsheets and database. In spreadsheets, they use absolute and mixed cell references, use the IF function VLOOKUP, create and edit charts, use and link multiple workbooks, consolidate worksheets, create pivot tables, and write macros. In database, they create tables using advanced filters, sorts with multiple criteria, default values, input masks, data validation, and lookup fields. Students complete a final presentation displaying their ability to organize information using a database and analyze it using spreadsheets. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	034	Data Processing/Computer Permit
	037	Computer Tech Permit
	225	Business Technology

**492600 DWE-Approved Business Education**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in business education submitted by the district.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	034	Data Processing/Computer Permit
	037	Computer Tech Permit
	225	Business Technology

**590070 DWE-Approved Business Education**

Credit: 1 Grade Levels: 9-12

Credit: 1 Grade Levels: 9-12

This is an individually approved course in business education submitted by the district.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	034	Data Processing/Computer Permit
	037	Computer Tech Permit
	225	Business Technology



**492490 DWE-Approved Computer Applications I (9-12)**

Credit: .5 Grade Levels: 9-12

Computer Applications I is a half-unit course designed to provide students with the fundamental computer skills necessary to do well in high school and in virtually all jobs today. In the area of word processing, students will learn the fundamental skills necessary to create and edit the most widely used documents and use the most commonly used features of a word processor, such as bullets, numbered lists, special characters, borders and shading, fonts, and paragraph and line searching. The fundamentals in use of scanners, graphics, and Word Art are applied to documents. Internet searching skills and citing Internet sources are stressed with these applied to a simple PowerPoint presentation. In the area of spreadsheets, students will be expected to create and edit simple spreadsheets using basic formulas and functions and create a simple graph or chart. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492500 DWE-Approved Computer Applications II**

Credit: .5 Grade Levels: 9-12

Computer Applications II is a half-unit course designed to provide students with the intermediate computer skills necessary to do well in high school and in virtually all jobs today. Students will learn techniques that will allow them to create fairly complex word processing and spreadsheet documents. They will continue their Internet research, applying it to spreadsheets, charts and graphs, and Web pages. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492510 DWE-Approved Computer Applications III**

Credit: .5 Grade Levels: 9-12

Computer Applications III is a half-unit course designed to provide students with the computer skills necessary to do well in college and needed in most jobs today. Students will learn techniques that will allow them to create simple to intermediate desktop publishing documents; create, access, and edit databases; use e-mail efficiently and ethically; create advanced electronic presentations; and create Web pages using Web-page design software. They will continue their Internet research, applying it to advanced electronic presentations and the Web pages they create. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492520 DWE-Approved Programming III**

Credit: .5 Grade Levels: 9-12

Programming III is a half-unit course that is a continuation of the study of the language taught in Programming II. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492550 DWE-Approved Senior Technology Seminar**

Credit: .5 Grade Levels: 12

In this project-based course, students are assigned actual computer projects from the school district and local businesses. The projects may include creating presentations to be used at meetings and seminars, creating advanced databases, maintaining Web pages, customizing database reports and screens, maintaining computers, etc. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	037	Computer Tech Permit
	225	Business Technology

**492540 DWE-Approved Web Design and Multimedia Production**

Credit: .5 Grade Levels: 11-12

Students learn how to use all of the media equipment (digital camera, camcorder, video capture device, and scanner). Students create multimedia presentations, Web pages, and videos. Emphasis is on good design as well as technical skill as students incorporate the proper combination of text, graphics, video, and sound. Students also edit and produce sophisticated graphics and "animated gifs" for the Web. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	037	Computer Tech Permit
	225	Business Technology

**492170 Enterprise Management I**

Credit: .5 Grade Levels: 11-12

Enterprise Management I is a one-semester course designed to offer an overview of the American business enterprise system. It provides a study of various forms of ownership, internal organization, management functions, and financing as they relate to business. The course content focuses on the concepts and practices of small business ownership and management. The student should be introduced to microcomputer software that is used as a tool for management functions.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	040	Marketing Education
	222	Marketing Technology
	225	Business Technology

**492180 Enterprise Management II**

Credit: .5 Grade Levels: 11-12

Enterprise Management II is a one-semester course that incorporates applied economics with emphasis on current applications of economic theory, international economics, and small business economic applications. It is recommended that Economics at Work – developed by the Agency for Instructional Technology, the National Council on Economic Education, and a consortium of state education agencies – be utilized in the second semester as a contextual, multimedia approach designed around five major economic activities, including producing, exchanging, consuming, saving, and investing.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	040	Marketing Education
	222	Marketing Technology
	225	Business Technology

**492200 Human Resource Management**

Credit: 1 Grade Levels: 11-12

Human Resources Management is a two-semester course designed to teach students the implementation of the strategies, plans, and programs required to attract, motivate, develop, reward, and retain the best people to meet the organizational goals and operational objectives of a company.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492210 Insurance & Risk Management**

Credit: .5 Grade Levels: 11-12

Insurance & Risk Management provides an overview of the insurance industry, including various types of insurance, rates and claims, and career opportunities. Included are activities that help the student to better understand the importance of insurance and how it affects them both today and through their retirement years.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492220 International Business**

Credit: .5 Grade Levels: 10-12

International Business is a one-semester course pursuing the study of economics, competition, politics, and social activities across national boundaries. Students are taught to think in global terms concerning their legal, cultural, economic, and political environments.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492240 Introduction to Finance**

Credit: 1 Grade Levels: 9-12

Introduction to Finance focuses on the individual's role and financial responsibilities as a student, citizen, consumer, and an active participant in the business world. It informs students of their various financial responsibilities. This course is designed to be taught in a one-year format.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492580 Introduction to Java - Oracle Internet Academy**

Credit: .5 Grade Levels: 11-12

The goal of this course is to teach the fundamentals of the language. Before a student can create applets and other Net-based applications with Java, he/she must understand the basic elements of the language. It includes object-oriented programming; essential concepts, syntax, and programming constructs of the Java language; introduction to classes, objects, and methods; college application process, and IT career research.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492270 Investments & Securities**

Credit: .5 Grade Levels: 11-12

Introduction to Investments & Securities teaches students every step of the way toward smart saving and investing. Topics include how to invest in everything from certificates of deposit to mutual funds and stocks. The course will teach students how to research stocks and make informed decisions by using NAIC's Stock Selection Guide.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492590 Java Programming - Oracle Internet Academy**

Credit: .5 Grade Levels: 11-12

By the end of this course, the students will have a solid foundation that will enable them to start writing their own programs and applets using Java. This includes examining packages and interfaces, review for the Advanced Placement Computer Science Exam (APCS), introduction to integrated design environment (IDE) JDeveloper, applications, applets and UI components, and resume/portfolio building.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**690050 Keyboarding (9-12)**

Credit: .5 Grade Levels: 9-12

Keyboarding is a one-semester course designed to help students develop speed and accuracy by learning the touch operation of alphanumeric/keyboard characters. Emphasis is placed on the following: mastery of the keyboard with desirable keyboarding techniques; development of speed and accuracy; basic problem-solving applications of centering and arranging reports, letters, and tables; proofreading; formatting; and proper care of the equipment. Keyboarding is a foundation for developing entry-level skills for business careers. Only students who failed or did not take Keyboarding in the seventh or eighth grade are to be enrolled in this course.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
033	Middle School Business
224	Business Technology
225	Business Technology

**690060 Keyboarding Applications (9-12)**

Credit: .5 Grade Levels: 9-12

Keyboarding Applications is a one-semester course designed to further develop keyboarding skills. Emphasis is placed on the following: increasing speed and accuracy; proofreading; producing mailable copy from rough draft; producing handwritten and statistical documents; and improving production of various types of business communications. Keyboarding Applications provides the skills and knowledge necessary for entry-level employment for business careers. Only students who failed or did not take Keyboarding Applications in the seventh or eighth grade are to be enrolled in this course.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
033	Middle School Business
224	Business Technology
225	Business Technology

**492300 Lodging Management I (Business)**

Credit: 1 Grade Levels: 11-12

Lodging Management I has everything a student needs to get started in a hospitality career, with the classroom lessons and activities that teach valuable lodging skills and knowledge. This two-semester course is offered to 11<sup>th</sup>- and 12<sup>th</sup>-grade students with an opportunity upon graduation to be tested for industry-recognized certification.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492310 Lodging Management II (Business)**

Credit: 1 Grade Levels: 11-12

Tools are provided to aid the student in finding hospitality internships (jobs) under the supervision of work-site mentors so students can apply what they learn. When students graduate, they are ready to begin hospitality careers or continue their education at a college or university. This two-semester course is offered to 11<sup>th</sup>- and 12<sup>th</sup>-grade students with an opportunity upon graduation to be tested for industry-recognized certification.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492320 Management**

Credit: 1 Grade Levels: 11-12

Management is a two-semester course that assists the student in understanding basic management functions. Students study the management process, decision making, environmental factors, basic ethics, and social responsibility. Planning, organizing, leading, and controlling are emphasized as well as basic concepts of staffing, leadership, communications, entrepreneurship, and international management.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
225	Business Technology

**492360 Multimedia Applications I**

Credit: .5 Grade Levels: 11-12

Multimedia Applications I is a one-semester course giving students experience in using multimedia to merge text, graphics, video, and sound. Applied principles are used to analyze and organize information, set up a design structure, and produce special visual expressions.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
037	Computer Tech Permit
225	Business Technology

**492370 Multimedia Applications II**

Credit: .5 Grade Levels: 11-12

Multimedia Applications II is a one-semester course giving students advanced experience in using multimedia to merge text, graphics, video, and sound. Applied principles are used to analyze and organize information, set up a design structure, and produce special visual expressions.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
037	Computer Tech Permit
225	Business Technology

**492130 Office Education Cooperative**

Credit: 1 Grade Levels: 11-12

Office Education Cooperative is a two-semester course designed for junior and senior business students. This course covers such topics as use of current technology and communications, ergonomics, human relations, records management, and the basics of management and supervision. A supervised learning experience is required. This experience is for advanced business education students who attend school part of the day and work in a business office for the remainder.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492620 Office Education Work-Based Learning**

Credit: 1 Grade Levels: 11-12

The student's job must relate to his/her career objective and the work-site trainer must develop a list of competencies to be taught on the job relating to classroom competencies and career objectives. All aspects of the industry must be taught. A minimum of 135 hours during each semester on the job is required for the work experience credit of .5.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492380 Office Management**

Credit: 1 Grade Levels: 11-12

Office Management is a two-semester course focusing on management and supervision in the office environment. The course covers basic skills, such as word processing, records management, and communications, as well as decision making, critical thinking, teamwork, and ethics.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
225	Business Technology

**492390 Programming I**

Credit: .5 Grade Levels: 9-12

Programming I is a one-semester course in any modern, high-level, structured language. Concepts should be taught in the context of practical applications.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492400 Programming II**

Credit: .5 Grade Levels: 9-12

Programming II is a one-semester course that is a continuation of the study of the language taught in Programming I.

Does course count in required 38 units and, if yes, how: Yes Career &amp; Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492410 Rapid Writing I**

Credit: .5 Grade Levels: 10-12

Rapid Writing I is a one-semester course in any alphabetic writing or symbolic shorthand system designed to make note taking easier, faster, and efficient. Emphasis is placed on theory, speed, reinforcement, transcription skills, spelling, punctuation, and vocabulary. The course is designed for any student wishing to make notes for educational, business, or personal use.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
225	Business Technology

**492420 Rapid Writing II**

Credit: .5 Grade Levels: 10-12

Rapid Writing II is designed for the student who wishes to become more proficient in the art of note taking. Rapid Writing II is a continuation of Rapid Writing I and emphasizes speed, transcription skills, effective listening skills, spelling, vocabulary, mechanics of grammar, and note-taking applications.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
225	Business Technology

**492450 Spreadsheet Applications**

Credit: .5 Grade Levels: 10-12

Spreadsheet Applications is a one-semester course in which students use computer programs to analyze quantitative data. Emphasis is placed on the role and value of spreadsheets, financial reporting, budgeting, planning, and forecasting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

**492460 Travel Destinations**

Credit: .5 Grade Levels: 10-12

Travel Operations is a one-semester course that provides students information on the basics of the travel business.

Topics covered include appointments, functions, resources, reservations, bookings, traffic documents, accounting, sales reports, automation, and financial planning and management.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492470 Word Processing I**

Credit: .5 Grade Levels: 9-12

Word Processing I is a one-semester course designed to provide students with entry-level skills in word processing concepts, operations, text manipulations, and production of business documents using an intermediate or advanced level software program. In addition, training in basic word vocabulary skills, mechanics of punctuation and grammar, format, and style, proofreading, editing, and reviewing business documents are included in the course.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
037	Computer Tech Permit
225	Business Technology

**492480 Word Processing II**

Credit: .5 Grade Levels: 9-12

Word Processing II is a one-semester course designed to provide students with competencies in word processing concepts. Emphasis is on production of business documents and applications, including formats, creating and maintaining files, repetitive documents, revising, and printing.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	037	Computer Tech Permit
	225	Business Technology



**CLUSTER: FAMILY & CONSUMER SCIENCES; HOSPITALITY & TOURISM;  
HUMAN SVCS and EDUCATION (all pathways)**

**493020 Child Development**

Credit: .5 Grade Levels: 9-12

Child Development focuses on skills needed to guide the physical, intellectual, emotional, and social development of children. Upon completion of this course, the student should be prepared to care for and guide the development of a child through all stages of growth—within a family, as child care professional, or in other experiences with children.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science  
610 Childcare

**493030 Clothing Management**

Credit: .5 Grade Levels: 9-12

Experiences in the Clothing Management course are designed to assist students in developing skills necessary for management of individual and family wardrobes, for decision making as a clothing consumer, and for understanding the role of the clothing and textile industry in the economy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493280 DWE-Approved Family & Consumer Sciences**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in family & consumer sciences education submitted by the district.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**590060 DWE-Approved Family & Consumer Sciences**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in family & consumer sciences education submitted by the district.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493240 DWE-Approved Orientation to Teaching**

Credit: 1 Grade Levels: 10-12

This course is designed to provide students with knowledge that will help prepare them as future teachers. Upon completion of this course, a student should have a better understanding of the roles of the teacher in the profession, understand developmental characteristics of learners, identify teaching strategies, be creative in lesson delivery, and understand historical and current educational issues, policies, and practices. Districts desiring to implement this course should request approval from the Family & Consumer Sciences Office.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY

**493060 Family & Consumer Apprenticeship/Work-Based Learning I**

Credit: 1 Grade Levels: 11-12

This course is an effort between the school and an employer to train an individual for jobs in a particular occupational field in which the individual has an occupational objective.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493070 Family & Consumer Apprenticeship/Work-Based Learning II**

Credit: 1 Grade Levels: 12

This course is the second level of cooperative training. It, too, is a cooperative effort between the school and selected training stations/employers to train individuals for a job in one of the occupational family and consumer sciences areas.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493080 Family & Consumer Sciences**

Credit: 1 Grade Levels: 9-12

Family and Consumer Science is designed to provide students with basic information and skills needed to function effectively within the family and within a changing, complex society. Upon completion of this course, the student should have developed basic life skills that promote a positive influence on the quality of life.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493100 Family Dynamics**

Credit: 1 Grade Levels: 9-12

Family Dynamics focuses on the role of the family in helping individuals develop to their highest potential, in strengthening the community, and in addressing concerns of a global society.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493110 Food & Nutrition**

Credit: .5 Grade Levels: 9-12

This course focuses on the development of skills needed to select, prepare, and serve food that meets nutritional needs of individuals and families. Upon completion of this course, students should be able to apply sound nutritional practices that will have a positive effect on their health.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science  
580 Culinary Arts & Chef Preparation

**493130 Food Science**

Credit: .5 Grade Levels: 10-12

Experiences focus on the scientific method to study the various relationships between food science, nutrition, and food preparation. Laboratory skills developed in measuring, recording, and analyzing data are used to explore these relationships. Experimental methods are employed to analyze food mixtures, food microbiology, food preservations, and complex food systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493140 Housing & Interior Design**

Credit: .5 Grade Levels: 9-12

Housing and Interior Design focuses on personal and family housing needs, options for meeting those needs, and the role of the housing industry in the economy. Upon completion of the course, a student should be prepared to make wise decisions in obtaining and maintaining personal and family shelter.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493150 Human Relations**

Credit: .5 Grade Levels: 9-12

Human Relations focuses on the development of skills needed in order to build and maintain successful relationships in the home, community, and workplace. Upon completion of this course, the student should have a better understanding of self, know how to communicate effectively, and be able to establish and maintain effective relationships with family members, peers, and others.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493160 Leadership & Service Learning (9-12)**

Credit: .5 Grade Levels: 9-12

Leadership and Service Learning emphasizes the importance of leadership skills, volunteerism, and professionalism in the development of personal qualities. It focuses on the benefits of community service, leadership roles, and civic responsibilities. Current technology is used to enhance communication skills and promote professionalism.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493190 Managing Resources**

Credit: .5 Grade Levels: 9-12

Managing Resources is designed to assist students in developing an understanding of resources available to individual and families and ways to manage these resources so needs and goals are met.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493200 Nutrition & Wellness**

Credit: .5 Grade Levels: 9-12

Nutrition and Wellness emphasizes the interaction of nutrition, foods, sports, and exercise for lifelong fitness and well-being of individuals and families.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

**493210 Parenting**

Credit: .5 Grade Levels: 9-12

Parenting is designed to assist students in developing an understanding of the parenting process and of parenting skills. Upon completion of this course, a student should possess skills necessary to provide quality care for children—as a parent, as one employed to care for children, or as one who interacts with children in other settings.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science  
610 Child Care

**Child Care Guidance, Management, & Services****493010 Child Care & Guidance, Mgmt, & Services**

Credit: 1 Grade Levels: 10-12

This course is designed to provide students with information and experiences in the occupational field of child care and guidance, management, and services. Upon completion of this course, a student should have a better understanding of children and their development and have enhanced employability skills that will be of benefit regardless of the occupation or career in which employed.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science  
610 Child Care

## **Cosmetology**

### **494550 Cosmetology I**

Credit: 1 Grade Levels: 10-12

This two-semester instructional program prepares the individual to begin achieving the basic competencies necessary to begin a program of study in cosmetology.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 573 Cosmetology

### **494570 Cosmetology II**

Credit: 2 Grade Levels: 11-12

The course allows the completion of the 1,500 hours of training and instruction required to be eligible for the State Board of Cosmetology licensing examination.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 573 Cosmetology

### **494560 Cosmetology Lab**

Credit: 1 Grade Levels: 10-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive cosmetology product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 573 Cosmetology

## **Facilities Management, Maintenance, & Services**

### **493170 Lodging Management I (FACS)**

Credit: 1 Grade Levels: 11-12

Lodging Management I is the first part of a two-year, industry-based program that prepares students for careers in the hotel/resort industry. Upon completion of the course, successfully passing the Lodging Management exam, and completion of a hospitality internship, the student can receive national HBA/Lodging Management certification.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

### **493180 Lodging Management II (FACS)**

Credit: 1 Grade Levels: 11-12

Lodging Management II is the second part of a two-year, industry-based program that prepares students for careers in the hotel/resort industry. Upon completion of the course, successfully passing the Lodging Management exam, and completion of a hospitality internship, the student can receive national HBA/Lodging Management certification.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science

## **Food Production, Mgmt, & Services**

### **493260 Culinary Arts I**

Credit: 1 Grade Levels: 10-12

This course is designed to provide students with an in-depth study of the professional kitchen and culinary applications. A prerequisite to this course is Introduction to Culinary Arts.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 091 Vocational Home Economics  
215 Family & Consumer Science  
580 Culinary Arts & Chef Preparation

**493270 Culinary Arts II**

Credit: 1 Grade Levels: 10-12

This course is designed to provide students with advanced culinary applications, service, and presentation.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	091	Vocational Home Economics
	215	Family & Consumer Science
	580	Culinary Arts & Chef Preparation

**493120 Food Production, Mgmt, & Services**

Credit: 1 Grade Levels: 10-12

Emphasis in this course is given to the development of competencies related to employability; technology in food production, management, and services; sanitation and safety; nutrition as related to food service; serving of food; purchasing, receiving, and storing of food supplies; production and management of food; use, care, and storage of large and small commercial food service equipment; menu planning; and modified diets.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	091	Vocational Home Economics
	215	Family & Consumer Science
	580	Culinary Arts & Chef Preparation

**493250 Introduction to Culinary Arts**

Credit: .5 Grade Levels: 9-12

This course is designed to provide students with basic knowledge and understanding of culinary arts, covering such topics as basic cooking techniques, menu planning, basic nutrition, culinary math, safety, and sanitation. This course is a prerequisite to Culinary Arts I and Culinary Arts II.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	091	Vocational Home Economics
	215	Family & Consumer Science
	580	Culinary Arts & Chef Preparation

**493220 ProStart I**

Credit: 1 Grade Levels: 11-12

ProStart I is the first part of a two-year, industry-based program that prepares students for careers in the restaurant and food service industry. After completion of ProStart I, the student has the option to take ProStart II, complete 400 hours of hospitality-related work experience, take and pass the ProStart exam, and receive national HBA/ProStart certification.

Does course count in required 38 units and if Yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	091	Vocational Home Economics
	215	Family & Consumer Science
	580	Culinary Arts & Chef Preparation

**493230 ProStart II**

Credit: 1 Grade Levels: 11-12

ProStart II is the second part of a two-year, industry-based program that prepares students for careers in the restaurant and food service industry. Upon completion of ProStart I & II, 400 hours of hospitality-related work experience, and successfully passing the ProStart exam, the student can receive national HBA/ProStart certification.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:	091	Vocational Home Economics
	215	Family & Consumer Science
	580	Culinary Arts & Chef Preparation

## **CLUSTER: GOVERNMENT & PUBLIC ADMINISTRATION**

### **JROTC**

#### **495760 Air Force JROTC I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Air Force.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495770 Air Force JROTC II**

Credit: 1 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Air Force.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495780 Air Force JROTC III**

Credit: 1 Grade Levels: 11-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Air Force.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495880 Air Force JROTC IV**

Credit: 1 Grade Levels: 12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Air Force.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495790 Army JROTC I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Army.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495800 Army JROTC II**

Credit: 1 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Army.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

#### **495810 Army JROTC III**

Credit: 1 Grade Levels: 11-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Army.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495890 Army JROTC IV**

Credit: 1 Grade Levels: 12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Army.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495820 Marine JROTC I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Marine Corps.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495830 Marine JROTC II**

Credit: 1 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Marine Corps.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495840 Marine JROTC III**

Credit: 1 Grade Levels: 11-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Marine Corps.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495900 Marine JROTC IV**

Credit: 1 Grade Levels: 12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Marine Corps.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495850 Navy JROTC I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Navy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495860 Navy JROTC II**

Credit: 1 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Navy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495870 Navy JROTC III**

Credit: 1 Grade Levels: 11-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Navy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC

**495910 Navy JROTC IV**

Credit: 1 Grade Levels: 12

This instructional program prepares individuals to apply technical knowledge and skills to enter into a component of the Navy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 220 JROTC Permit  
612 JROTC



## **CLUSTER: HEALTH SCIENCE**

### **Medical Professions**

#### **495370 Abnormal Psychology**

Credit: .5 Grade Levels: 9-12

This course provides a basic survey of maladaptive human behavior. Major psychological disorders, their causes, symptom behaviors, cultural influences, and relevant treatment approaches are discussed. Included topics are historical medical background, perspectives of treatment of the mentally ill, fundamental definitions, causes of anxiety disorders, disorders of mood including depression and bipolar disorder, personality disorders, disorders of thought including schizophrenia, substance-related disorders, and domestic violence. Legal, ethical, and social issues relating to the medical professional's role in treating psychological disorders are explored.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 611 Medical Professions

#### **494140 DWE-Approved First Responder**

Credit: 1 Grade Levels: 9-12

This course introduces students to emergency medical technician occupational skills. Prior approval must be obtained from the Technical and Professional Office before this course is implemented.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

#### **495300 Human Anatomy and Physiology**

Credit: 1 Grade Levels: 9-12

This course focuses on anatomical and physiological systems of the body as well as the diseases of those systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

#### **495320 Human Behavior and Disorders**

Credit: .5 Grade Levels: 9-12

This course focuses on normal behavior and personality, abnormal behavior and personality, and behavior disorders and the therapies used to treat those disorders and abnormalities.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

#### **495340 Introduction to Medical Professions**

Credit: .5 Grade Levels: 9-12

This course provides a general overview of the many health-related occupations and the special concerns of the health care worker.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

#### **495380 Introduction to Medical Professions Extended**

Credit: .5 Grade Levels: 9-12

This course is designed as an extension of Introduction to Medical Professions. The course provides students with a general overview of the more crucial content areas of the medical professions education program core courses. Areas covered are medical terminology, medical math, human growth and development, processes of disease, and employability skills needed within the health care industry. This course is recommended for students who will not have the opportunity to take any additional medical professions education courses other than Introduction to Medical Professions.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 611 Medical Professions

**495350 Medical Apprenticeship/Work-Based Learning**

Credit: 1 Grade Levels: 11-12

This is an educational program that alternates in-school instruction and supervised on-the-job training activities in medical professions occupations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

**495310 Medical Clinical Internship/Specialization**

Credit: 1 Grade Levels: 11-12

This is an educational program that alternates in-school instruction and supervised on-the-job training activities in medical professions occupations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

**495330 Medical Procedures**

Credit: .5 Grade Levels: 9-12

Medical Procedures is a one-unit course that helps students develop specific and general skills needed by the health care professional.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

**495390 Medical Procedures Expanded**

Credit: .5 Grade Levels: 9-12

This course focuses on the specific skills needed in several different areas of health care. Students are able to build upon the skills gained in the Medical Procedures course. The different areas addressed are dental assisting, laboratory assisting, medical assisting, nurse assisting, physical therapy assisting, and veterinary assisting.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

**495360 Medical Terminology**

Credit: .5 Grade Levels: 9-12

Medical Terminology is a one-semester course that assists students in developing the language used for communication in the health care profession.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

**495290 Pathology**

Credit: .5 Grade Levels: 9-12

This course is devoted to the exploration of human pathology. Pathology is the branch of medical science that studies the causes, nature, and effects of diseases. This course of study begins with an introduction to pathology-related terms, predisposing factors of diseases, the relationship between diagnosis and prognosis, and disease treatments. Following the introduction, the course delves into a range of pathology-related topics and their relationships to specific systems of the human body. The topics include signs and symptoms of pathology, the effects of trauma, the effects of age, and characteristics of common diseases.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 070 Health Occupations  
611 Medical Professions

## **CLUSTER: LAW, PUBLIC SAFETY, & SECURITY**

### **Criminal Justice**

#### **494610 Criminal Law**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including witness interviewing, evidence collection and management, and basic crime prevention methods.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 603 Criminal Justice

#### **494620 Introduction to Criminal Justice**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including patrol and investigative activities, traffic control, crowd control, and public relations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 603 Criminal Justice

#### **494630 Law Enforcement I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including patrol and investigative activities, traffic control, crowd control, and public relations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 603 Criminal Justice

#### **494600 Law Enforcement II**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to perform the duties of police and public security officers, including patrol and investigative activities, traffic control, crowd control, public relations, and witness interviewing.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 603 Criminal Justice

## **CLUSTER: MANUFACTURING**

### **Furniture Manufacturing**

#### **494850 Furniture Manufacturing I**

Credit: 1 Grade Levels: 9-12

This instructional program introduces basic principles of assembling and finishing wooden furniture.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 581 Furniture/Cabinet Making

#### **494870 Furniture Manufacturing II**

Credit: 2 Grade Levels: 10-12

Skills and techniques taught in this class will correlate more closely with manufacturing standards as determined by the furniture industry. Each student will assemble and finish a useful furniture piece as a required individual project.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 581 Furniture/Cabinet Making

#### **494860 Furniture Manufacturing Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive furniture manufacturing product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 581 Furniture/Cabinet Making

### **Industrial Equipment Maintenance**

#### **495150 Industrial Equipment Maintenance I**

Credit: 1 Grade Levels: 9-12

The student will be trained to perform a variety of skills to repair, install, fabricate, set up, adjust, and do preventive maintenance to industrial machinery and equipment.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 585 Industrial Equipment Maintenance

#### **495170 Industrial Equipment Maintenance II**

Credit: 2 Grade Levels: 10-12

The student will be trained to perform a variety of skills to repair, install, fabricate, set up, adjust, and do preventive maintenance to industrial machinery and equipment.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 585 Industrial Equipment Maintenance

#### **495160 Industrial Equipment Maintenance Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute comprehensive industrial equipment maintenance.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 585 Industrial Equipment Maintenance

### **Machine Tool**

#### **495200 Machine Tool I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to shape parts on machines, such as lathes, grinders, drill presses, and milling machines from various materials. Programs may also train in the use of individual machine tools.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 587 Machine Tool

**495220 Machine Tool II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to shape parts on machines, such as lathes, grinders, drill presses, and milling machines from various materials. Programs may also train in the use of individual machine tools.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 587 Machine Tool

**495210 Machine Tool Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute comprehensive machine tool technology.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 587 Machine Tool

**Major Appliance Tech****495250 Major Appliance Technology I**

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of major appliances. Instruction will include units on safety, tools and equipment, fundamentals of electricity, and electric motors.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 588 Major Appliance

**495270 Major Appliance Technology II**

Credit: 2 Grade Levels: 10-12

This course prepares individuals to engage in the diagnosis and repair of major appliances. Instruction will include units on clothes washers, clothes dryers, refrigerators and freezers, dishwashers, and microwave ovens.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 588 Major Appliance

**495260 Major Appliance Technology Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute comprehensive major appliance repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 588 Major Appliance

**Welding****495550 Gas Metal Arc Welding**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of gas metal arc welders.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 597 Welding

**495560 Gas Tungsten Arc Welding**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of gas tungsten arc welders.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 597 Welding

**495570     Metal Fabrication**

Credit: 1     Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     597     Welding

**495580     Shielded Metal Arc Welding**

Credit: 1     Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to unite or separate metal parts by heating, using a variety of techniques and equipment. Emphasis of this course will be the use of shielded metal arc welders.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     597     Welding

## **CLUSTER: MARKETING, SALES, & SERVICE**

### **492010 Advertising**

Credit: .5 Grade Levels: 10-12

Advertising is a one-semester course designed to focus on the competencies needed for the planning and implementation of a successful advertising program. Students are exposed to media, methods of research, budgets, and evaluations that are used to sell a product, service, or business. Hands-on experience is given in copywriting, layout, and production in various media. Desktop publishing should be introduced.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

### **590080 DWE-Approved Marketing Education**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in marketing education submitted by the district.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

040	Marketing Education
222	Marketing Technology

### **492610 DWE-Approved Marketing Education**

Credit: 1 Grade Levels: 9-12

This is an individually approved course in marketing education submitted by the district.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

040	Marketing Education
222	Marketing Technology

### **492190 Fashion Merchandising**

Credit: .5 Grade Levels: 10-12

Fashion Merchandising is a one-semester course designed to offer an overview of the fashion industry. It provides the foundation in preparing students for a wide range of careers available in the different levels of the fashion industry. Emphasis is given to historical development, textiles, manufacturers, merchandising, domestic and foreign markets, accessories, and retailing.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

### **492230 International Travel**

Credit: .5 Grade Levels: 10-12

International Travel is a one-semester course that provides detailed coverage of international air travel; geography; international airfares and ticketing procedures; travel requirements; travel in Europe, Russia, Asia, and the Pacific; ecotourism analysis; and broadening of global horizons to maximize cultural understanding.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492250 Introduction to Hospitality**

Credit: .5 Grade Levels: 11-12

Introduction to Hospitality is a one-semester course that provides students with an overview of the hospitality industry and career opportunities within the industry. Students learn operation procedures in front office operations, guest services, marketing and sales, bank office functions, ownership and management, food, beverages, and housekeeping management.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492260 Introduction to Travel & Tourism**

Credit: .5 Grade Levels: 10-12

Introduction to Travel and Tourism is a one-semester in-depth study of worldwide travel, transportation, and tourism. Students are introduced to the industry as a whole and the job opportunities that are available. The course covers resource allocation, technology, and social, organizational, and technological systems.

Does course count in required 38 units and if Yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
040	Marketing Education
222	Marketing Technology
225	Business Technology

**492330 Marketing**

Credit: 1 Grade Levels: 11-12

Marketing is a two-semester course designed to provide students with the fundamental concepts, principles, skills, and attitudes common to the field of marketing. Instruction focuses on market types, market analysis, consumer types, planning, promotion, buying, pricing, distribution, finance, trends, and careers. Although not mandatory, many students can benefit from the on-the-job training component (cooperative education) of this course. The student's job must relate to his/her career objective.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

040	Marketing Education
222	Marketing Technology

**492350 Marketing Management**

Credit: 1 Grade Levels: 11-12

Marketing Management is a two-semester course designed to develop decision-making skill through the application of marketing and management principles. Competencies will be accomplished by utilizing various instructional methods, resources, and direct involvement with marketing businesses. The course will focus on organization, finance, risks, credit, technology, and social aspects. Although not mandatory, many students can benefit from the on-the-job training component (cooperative education) of this course. The student's job must relate to his/her career objective.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

040	Marketing Education
222	Marketing Technology

**492340 Marketing Management Work-Based Learning**

Credit: 1 Grade Levels: 11-12

Although not mandatory, many students can benefit from the on-the-job training component (cooperative education) of Marketing and Marketing Management. The student's job must relate to his/her career objective, and the work-site trainer must develop a list of competencies to be taught on the job that coordinate with classroom competencies and career objectives. All aspects of the industry must be taught. Students attend school part of the day and work in a marketing position for the remainder. A minimum of 135 hours during each semester on the job is required for the work experience credit of .5.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

040	Marketing Education
222	Marketing Technology



**492430     Retailing**

Credit: .5    Grade Levels: 10-12

Retailing is a one-semester course designed to offer an overview of the retailing industry in the United States. A study is made of the types of retail marketing, organization, personnel, merchandising, promotion, selling, operations, and control. The course focuses on the concepts and practices of retail business operations.

Does course count in required 38 units and, if yes, how:    Yes    Career & Technical

Does course count in the 21 units required for graduation:    Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	040	Marketing Education
	222	Marketing Technology
	225	Business Technology

**492440     Salesmanship**

Credit: .5    Grade Levels: 10-12

Salesmanship is a one-semester course designed to inform students about specific selling techniques and attitudes necessary to become a successful salesperson. The course focuses on serving customers and helping them make wise buying decisions. Emphasis is placed on the importance of human relations in selling, the functions performed by salespeople, development of personality traits needed by salespeople, and the buying/selling process.

Does course count in required 38 units and, if yes, how:    Yes    Career & Technical

Does course count in the 21 units required for graduation:    Yes

Licensure required to teach this course:	031	Business Education (Secretarial)
	032	Business Education
	040	Marketing Education
	222	Marketing Technology
	225	Business Technology

## **CLUSTER: SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS**

### **Computer Engineering**

#### **494400     Diagnostics**

Credit: 1     Grade Levels: 9-12

This course will prepare individuals in the understanding and application of basic principles and use of microcomputer system hardware, peripheral devices, and operating system hardware.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     572     Computer Engineering

#### **494410     Networking**

Credit: 1     Grade Levels: 9-12

Students in Networking will acquire skills in understanding the function, installation, configuration, and diagnostic procedures for microcomputer local area network hardware, electronic components, peripheral devices, and operating system software.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     572     Computer Engineering

#### **494420     Operations**

Credit: 1     Grade Levels: 9-12

This course prepares individuals in the understanding and application of basic principles, operation, and use of microcomputer system hardware peripheral devices and operating system hardware.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     572     Computer Engineering

### **Drafting & Design**

#### **494700     Drafting & Design**

Credit: 1     Grade Levels: 9-12

Drafting and Design focuses on the basic knowledge and skills required to produce engineering and architectural drawings. Emphasis is given to the development of competencies related to the use of drafting equipment, the production of beginning level engineering drawings and the production of beginning level architectural drawings.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     575     Drafting and Design

#### **494740     Engineering/CADD I**

Credit: 1     Grade Levels: 9-12

Engineering/CADD I focuses on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical-thinking skills. The course is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     575     Drafting and Design

#### **494760     Engineering/CADD II**

Credit: 2     Grade Levels: 10-12

Engineering/CADD II focuses on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical-thinking skills. The course is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

Does course count in required 38 units and, if yes, how:     Yes     Career & Technical

Does course count in the 21 units required for graduation:     Yes

Licensure required to teach this course:     575     Drafting and Design

**494750 Engineering/CADD Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive engineering product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 575 Drafting and Design

**Electronics****494800 Electronics I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to support the electronic engineer and other professionals in the design, development, modification, and testing of electronic circuits, devices, and systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 577 Electronics

**494820 Electronics II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to support the electronic engineer and other professionals in the design, development, modification, and testing of electronic circuits, devices, and systems.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 577 Electronics

**494810 Electronics Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute a comprehensive electronics product.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 577 Electronics

**Pre-engineering****495440 Civil Engineering & Architecture**

Credit: 1 Grade Levels: 11-12

This course builds upon the computer solid modeling design skills developed in Introduction to Engineering Design.

Students will be presented with design problems that require the use of computer-aided drafting skills to develop solutions to the problems. They will evaluate the solutions using mass property analysis (study of the relationship among the design, function, and materials used), make appropriate modifications, and use prototyping equipment to produce 3-D models of the solutions. Students will be expected to communicate the process and results of their work through oral and written reports.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

**495450 Computer-Integrated Manufacturing**

Credit: 1 Grade Levels: 11-12

This course builds upon the computer solid modeling design skills developed in Introduction to Engineering Design.

Students will be presented with design problems that require the use of Inventor to develop solutions to the problems. They will evaluate the solutions using mass property analysis (study of the relationship among the design, function, and materials used), make appropriate modifications, and use prototyping equipment to produce three-dimensional models of the solutions. Students will be expected to communicate the process and results of their work through oral and written reports.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

**495460 Digital Electronics**

Credit: 1 Grade Levels: 9-12

Digital Electronics is a course of study in applied digital logic. The course is patterned after the first-semester course in digital electronics taught in two- and four-year colleges. Students will study the application of electronic logic circuits and devices and apply Boolean logic to the solution of problems. Students will design circuits using Circuit Maker, export their designs to a printed circuit auto-routing program that generates printed circuit boards, and construct the design using chips and other components.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

**495470 Engineering Design and Development**

Credit: 1 Grade Levels: 12

In this course, students will work in teams of two to four to design and construct the solution to an engineering problem, applying the principles developed in the preceding four courses. The problem may be selected from a database of engineering problems, be a recognized national challenge, or be an original engineering problem identified by the team and approved by the instructor. The problems will involve a wide range of engineering applications (e.g., a school robo-mascot, automated solar water heater, remote control hover craft). Students will maintain a journal as part of a portfolio of their work. Each team will be responsible for delivering progress reports and making final presentations of its project for an outside review panel.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

**495480 Introduction to Engineering Design**

Credit: 1 Grade Levels: 9-12

Introduction to Engineering Design is an introduction course that develops students' problem-solving skills, with emphasis placed on the concept of developing a 3-D model or solid rendering of an object. Students focus on the application of visualization processes and tools provided by modern, state-of-the-art computer hardware and software. The course will emphasize the design development process of a product and how a model of that product is produced, analyzed, and evaluated, using a computer-aided design system. Various design applications will be explored with discussion of possible career opportunities.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

**495490 Principles of Engineering**

Credit: 1 Grade Levels: 9-12

Principles of Engineering is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its career possibilities. Students will develop engineering problem-solving skills that are involved in postsecondary education programs and engineering careers. They will explore various engineering systems and manufacturing processes. They will also learn how engineers address concerns about the social and political consequences of technological change. The main purpose of this course is to experience through theory and hands-on, problem-solving activities what engineering is all about and to answer the question, "Is a career in engineering or engineering technology for me?"

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 606 Engineering Professions

## **CLUSTER: TRANSPORTATION, DISTRIBUTION & LOGISTICS**

### **Automotive Collision**

#### **494300 Nonstructural Analysis/Repair**

Credit: 1 Grade Levels: 9-12

This course concentrates on analysis and repair of the nonstructural components as they pertain to collision repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 567 Automotive Collision Repair

#### **494310 Painting/Refinishing**

Credit: 1 Grade Levels: 9-12

This course concentrates on painting and refinishing as they pertain to collision repair. The course includes causes and correction of finish defects.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 567 Automotive Collision Repair

#### **494320 Structural Analysis/Repair**

Credit: 1 Grade Levels: 10-12

This course concentrates on analysis and repair of the structural components as they pertain to collision repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 567 Automotive Collision Repair

### **Automotive Service Technology**

#### **494180 Brakes**

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of brakes. Instruction will include units on hydraulic system diagnosis and repair, drum brake diagnosis and repair, and disc brake diagnosis and repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 568 Automotive Service Technology

#### **494190 Electrical Systems**

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of electrical/electronic systems. Instruction will include units on general electrical system diagnosis and service.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 568 Automotive Service Technology

#### **494200 Engine Performance**

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of engine performance. Instruction will include units on general engine diagnosis and computerized engine controls diagnosis and repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 568 Automotive Service Technology

#### **494210 Suspension & Steering**

Credit: 1 Grade Levels: 9-12

This course prepares individuals to engage in the diagnosis and repair of suspension and steering. Instruction will include units on steering systems diagnosis and repair; suspension systems diagnosis and repair; wheel alignment diagnosis, adjustment, and repair; and wheel and tire diagnosis and repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 568 Automotive Service Technology

## **Aviation**

### **494250 Aviation I**

Credit: 2 Grade Levels: 9-12

This program will include instruction on the general core curriculum required by the Federal Aviation Administration.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 569 Aviation Mechanics

### **494260 Aviation II**

Credit: 2 Grade Levels: 10-12

This program will include instruction on the general core curriculum required by the Federal Aviation Administration (FAA).

This course will prepare students for the Air Frame and Power Plant School certified by the FAA.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 569 Aviation Mechanics

## **Diesel Mechanics**

### **494650 Diesel Mechanics I**

Credit: 2 Grade Levels: 9-12

This instructional program prepares individuals to diagnose and repair diesel equipment in on-road and off-road vehicles and machinery.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 574 Diesel Mechanics

### **494660 Diesel Mechanics II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to diagnose and repair diesel equipment in on-road and off-road vehicles and machinery. Advanced on-the-job training may be included.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 574 Diesel Mechanics

## **Power Equipment Technology**

### **495400 Power Equipment Technology I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to repair, service, and maintain small internal-combustion engines used on portable equipment, such as lawnmowers, chain saws, and rotary tillers.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 593 Power Equipment Technology

### **495420 Power Equipment Technology II**

Credit: 2 Grade Levels: 10-12

This instructional program prepares individuals to apply technical knowledge and skills to repair, service, and maintain small internal-combustion engines used on portable equipment, such as lawnmowers, chain saws, and rotary tillers.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 593 Power Equipment Technology

### **495410 Power Equipment Technology Lab**

Credit: 1 Grade Levels: 9-12

This production-based program is designed to allow for the development of skills and knowledge needed to execute comprehensive power equipment repair.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 593 Power Equipment Technology

**COURSES ONLY: WORK-BASED LEARNING; SUPPORT; SPECIAL POPULATIONS;  
& MISCELLANEOUS COURSES**

**690040 Driver's Education**

Credit: .5 Grade Levels: 9-12

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 210 Driver Education  
417 Driver Education

**Career Preparation & Exploration**

**690010 DWE-Approved Keystone (9-10)**

Credit: .5 Grade Levels: 9-10

This program is designed to help first-year high school students (9th-10th grade) make smooth transitions to high school. The program is customized by faculty members to meet the needs of individual project sites. The purpose of the program is to decrease the number of disciplinary referrals, lower drop-out rate, raise test scores, increase student involvement in school activities, and promote sound career development planning. Although keystone programs originated as orientation programs for schools implementing academies, they may be adapted for use in the regular school environment.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 410 Career Academy Endorsement

**493890 DWE-Approved Senior Seminar**

Credit: .5 Grade Levels: 9-12

This class will enhance existing programs of study by offering students opportunities for program of study technical research, academic integration, business and industry interaction, oral presentation, and demonstration of learned skills. This class should allow students to synthesize learned information through the use of career scenarios. This class may be offered for one or two semesters with .5 credit per semester.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY

**493860 Internship**

Credit: 1 Grade Levels: 11-12

This is a practical and supervised job experience designed to assist students to successfully transition from school-to-work or successfully continue their education in a chosen career focus/major area. Internships are individualized and competency-based.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 412 Career Preparation

**493880 Workplace Readiness**

Credit: .5 Grade Levels: 10-12

This one-semester course is designed to help students transition from school to work. It focuses on the SCANS competencies with emphasis on problem solving, teamwork, communication skills, and the use of technology.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 412 Career Preparation

**460010 EAST/Workforce Technology**

Credit: 1 Grade Levels: 9-12

This one year of EAST Lab experience is designed to help students transition from school to work. It focuses on the SCANS competencies with emphasis on problem solving, teamwork, communications skills, and the use of technology. It counts as one unit of credit toward completer status in any of the career and technical areas of study.

Does course count in required 38 units and, if yes, how: Yes ADE

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 412 Career Preparation

## **Dry Cleaning**

### **495180 Dry Cleaning I**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into the dry cleaning profession.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 576 Dry-clean/Laundry

### **495190 Dry Cleaning II**

Credit: 1 Grade Levels: 9-12

This instructional program prepares individuals to apply technical knowledge and skills to enter into the dry cleaning profession.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 576 Dry-clean/Laundry

## **Special Populations**

### **493800 JAG Apprenticeship/Work-Based Learning**

Credit: 1 Grade Levels: 11-12

This is an instructor-supervised work release course that includes monthly employer evaluations of participants.

Employment is not a requirement of the JAG program, but credit can be given at the discretion of the individual school district. Participants should be expected to complete 180 hours of work-based learning in order to receive one credit—with a maximum of four credits for completing 720 hours of work study within a consecutive two-year period.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 413 Career Services for Special Populations

### **493780 JAG Multi-Year I**

Credit: 1 Grade Levels: 11-12

JAG utilizes the National Jobs for America's Graduates model. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 413 Career Services for Special Populations

### **493790 JAG Multi-Year II**

Credit: 1 Grade Levels: 11-12

JAG utilizes the National Jobs for America's Graduates model. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 413 Career Services for Special Populations

### **493770 JAG Senior Applications**

Credit: 1 Grade Levels: 12

JAG utilizes the National Jobs for America's Graduates model. It is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 413 Career Services for Special Populations

### **690030 STRIVE**

Credit: 1 Grade Levels: 9-10

This secondary program is individualized to meet the specific academic needs of career and technical students who are members of a special population. This program provides a versatile spectrum of instruction with the intent of improving vocational and academic scores and/or skills. Student eligibility is to be discussed with the student, parents, STRIVE instructor, and/or counselor prior to enrollment.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 413 Career Services for Special Populations



## **Technical & Professional (nonprogram specific)**

### **590010 Cashier/Checker**

Credit: .5 Grade Levels: 9-12

This course prepares individuals to apply technical knowledge and skills to become cashiers or checkers.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 600 Cashier/checker Instruction

### **590110 DWE-Approved Career & Technical Education**

Credit: .5 Grade Levels: 9-12

This is a specialized CTE course for which the district must submit a framework and receive approval to teach. District must have a letter on file to use this course code.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY Technical and Professional Permit

### **590020 DWE-Approved Cisco Networking Academy**

Credit: 1 Grade Levels: 9-12

Students will acquire skills in understanding the function, installation, configuration, and diagnostic procedures for microcomputer local area network hardware, electronic components, peripheral devices, and operating system software. Prior approval must be obtained from the Technical and Professional Office before this course is implemented.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 572 Computer Engineering

### **590030 DWE-Approved FIRST Robotics**

Credit: 1 Grade Levels: 9-12

This course shows students that the technological fields hold many opportunities and that the basic concepts of science, math, engineering, and invention are exciting and interesting. Prior approval must be obtained from the Technical and Professional Office before this course is implemented.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 592 Robotics

### **590090 DWE-Approved Technical & Professional Course**

Credit: 1 Grade Levels: 9-12

This course code is for districts that submit a framework for an approved technical/professional course for which frameworks do not exist. This course will not meet any requirement in the 38 units required to be offered, but it may count toward the six career focus units required for graduation.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY Technical and Professional Permit

### **590100 DWE-Approved Technical & Professional Lab**

Credit: 1 Grade Levels: 9-12

This course is an extension of an existing career and technical program of study – to allow students more time for hands-on application of the approved framework/curriculum. This course will not count in the 38 units required to be taught, but it will count in the six units for a career focus.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY Technical and Professional Permit

**494010 EITE I (9th grade)**

Credit: .5 Grade Levels: 9

Exploring Industrial Technology Education (EITE) is an instructional program that has an intent to develop initial technological literacy through the student completing exploratory modules clustered around four technology occupation themes.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

100	Industrial Arts I
101	Middle School Industrial Arts
102	Industrial Arts II
211	Industrial Tech Education
212	Industrial Tech Education
579	Exploring Industrial Technology

**494020 EITE II (9th grade)**

Credit: .5 Grade Levels: 9

Exploring Industrial Technology Education (EITE) is an instructional program that has an intent to develop initial technological literacy through the student completing exploratory modules clustered around four technology occupation themes.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

100	Industrial Arts I
101	Middle School Industrial Arts
102	Industrial Arts II
211	Industrial Tech Education
212	Industrial Tech Education
579	Exploring Industrial Technology

**494030 Industrial Apprenticeship/Work-Based Learning I**

Credit: 1 Grade Levels: 9-12

Industrial Apprenticeship/Work-Based Learning I is an educational program that alternates in-school instruction and supervised on-the-job training activities in technical and professional occupations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 584 Industrial Cooperative Training

**494040 Industrial Apprenticeship/Work-Based Learning II**

Credit: 1 Grade Levels: 10-12

Industrial Apprenticeship/Work-Based Learning II is an educational program that alternates in-school instruction and supervised on-the-job training activities in technical and professional occupations.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 584 Industrial Cooperative Training

**590040 Industrial Tech Ed**

Credit: 1 Grade Levels: 9-12

Industrial Technology Education is a program of instruction designed to prepare high school students to comprehend a technological society. Students will engage in activities enabling them to use, control, and create the various technology resources.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course:

010	Agriculture
100	Industrial Arts I
102	Industrial Arts II
211	Industrial Tech Education
212	Industrial Tech Education
579	Exploring Industrial Technology

## **Youth Apprenticeship**

### **493950 Youth Apprenticeship**

Credit: 1 Grade Levels: 11-12

This course code is for recognized and approved youth apprenticeship programs. Prior approval by the Department of Workforce Education is required.

Does course count in required 38 units and, if yes, how: Yes Career & Technical

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: ANY

## **APPLIED SCIENCES**

### **Principles of Technology**

#### **523000 Principles of Technology I**

Credit: 1 Grade Levels: 10-12

PT I is designed as a hands-on, activity-based, applied physics course (it normally requires two years to complete PT I and PT II). One physics (science) credit toward graduation requirements shall be given students who complete the two-year PT course (PT I and PT II). One elective vocational credit or one physical science credit shall be given students who complete only one year of the PT course.

Does course count in required 38 units and, if yes, how: Yes ADE-Approved Physical Science Elective

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 6541 Principles of Technology I

#### **522000 Principles of Technology II**

Credit: 1 Grade Levels: 10-12

PT II is designed as a hands-on, activity-based, applied physics course (it normally requires two years to complete PT I and PT II). One physics (science) credit toward graduation requirements shall be given students who complete the two-year PT course (PT I and PT II). One elective vocational credit or one physical science credit shall be given students who complete only one year of the PT course.

Does course count in required 38 units and, if yes, how: Yes ADE-Approved Physics Elective

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 6542 Principles of Technology II

### **Physics in Context**

#### **522070 Physics in Context**

Credit: 1 Grade Levels: 10-12

PIC is designed as a hands-on, activity-based, applied physics courses normally requiring one year to complete. Students will receive information and experiences from a balance of sources, such as class lecture, demonstrations and discussions, the text and workbook, audio-video/visual aids, math skills labs, hands-on physics applications labs, and review.

Does course count in required 38 units and, if yes, how: Yes ADE-Approved Physics

Does course count in the 21 units required for graduation: Yes

Licensure required to teach this course: 6542 Principles of Technology II

## **MIDDLE SCHOOL COURSES**

### **399100 Career Orientation**

Credit: Grade Levels: 7-8

This foundation course uses hands-on activities and research to provide an opportunity for exploring the 16 career clusters. It is the point at which educational development begins with the establishment of individual career plans.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 411 Career Orientation Endorsement

### **399040 Computer Technology: Introduction**

Credit: Grade Levels: 7-8

Computer Technology: Introduction is a one-semester course designed to prepare seventh- and eighth-grade students with an introduction to computers and business applications that are necessary to live and work in a technological society. Emphasis is given to data entry, computer concepts and operations, programming and design, computer software, implications of technology in society, and ethics. The course is designed to provide students with an understanding of the business, industrial, and scientific areas in which the computer is used.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
033	Middle School Business
034	Data Processing/Computer Permit
037	Computer Tech Permit
224	Business Technology

### **399020 DWE-Approved Computer Applications I (8th grade)**

Credit: Grade Levels: 8

Computer Applications I is a half-unit course designed to provide students with the fundamental computer skills necessary to do well in high school and in virtually all jobs today. In the area of word processing, students will learn the fundamental skills necessary to create and edit the most widely used documents and use the most commonly used features of a word processor, such as bullets, numbered lists, special characters, borders and shading, fonts, and paragraph and line searching. The fundamentals in use of scanners, graphics, and Word Art are applied to documents. Internet searching skills and citing Internet sources are stressed with these applied to a simple PowerPoint presentation. In the area of spreadsheets, students will be expected to create and edit simple spreadsheets, using basic formulas and functions, and create a simple graph or chart. Districts desiring to implement this course should request approval from the Business/Marketing Education Office.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
034	Data Processing/Computer Permit
037	Computer Tech Permit
225	Business Technology

### **399170 DWE-Approved Keystone (7-8 grade)**

Credit: Grade Levels: 7-8

This program is designed to help students make smooth transitions to the high school facility. It is customized by faculty members to meet the needs of individual project sites. The purpose of the program is to decrease the number of disciplinary referrals, lower the drop-out rate, raise test scores, increase student involvement in school activities, and promote sound career development planning. Although keystone programs originated as orientation programs for schools implementing academies, they may be adapted for use in regular school environments.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 410 Career Academy Endorsement

**399210 DWE-Approved Performing Arts Awareness**

Credit: Grade Levels: 7-8

This course is designed to teach students basic skills and provide them with information about requirements for successful employment in one or more of the performing arts career areas. Students will be taught the basic academic and performance skills related to the topics of either dance, music, theater/playwriting, or technical design and production. Students will be expected to demonstrate an understanding of basic skills and communicate orally their knowledge of careers in the specified area of performing arts. Based on the individual school request and submission of DWE approvable frameworks, course approval will be given for instruction in one or more of the following topics: dance, music, theater and playwriting, or technical design and production.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	124	Vocal K-12
	125	Instrumental K-12
	203	Vocal 5-8
	204	Vocal 5-8
	205	Instrumental 5-8
	206	Instrumental 5-8
	613	Performing Arts Permit

**399220 DWE-Approved Performing Arts Exploration**

Credit: Grade Levels: 7-8

This course is designed to teach students basic skills and provide them with experiences that increase their knowledge about careers in the performing arts. Students will be taught the basic academic and performance skills related to the topics of either dance, music, theater/playwriting, or technical design and production. Students will be expected to demonstrate an understanding of basic skills and communicate their knowledge of careers in the specified area of performing arts. Based on the individual school request and submission of DWE approvable frameworks, course approval will be given for instruction in one or more of the following topics: dance, music, theater and playwriting, or technical design and production.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	124	Vocal K-12
	125	Instrumental K-12
	203	Vocal 5-8
	204	Vocal 5-8
	205	Instrumental 5-8
	206	Instrumental 5-8
	613	Performing Arts Permit

**399070 Family & Consumer Sciences (8th grade)**

Credit: Grade Levels: 8

Family and Consumer Sciences is designed to provide students with basic information and skills needed to function effectively within the family and within a changing, complex society. Upon completion of this course, the student should have developed basic life skills that promote a positive influence on the quality of life.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	091	Vocational Home Economics
	092	Middle School Home Economics
	214	Family & Consumer Science
	215	Family & Consumer Science

**399080 Family & Work Connections**

Credit: Grade Levels: 7-8

Family and Work Connections is a semester course in which emphasis is placed on competencies related to Family, Career and Community Leaders of America; personal and family development; relationships; home environment; food and nutrition; wellness; resource management; responsible child care; clothing and appearance; and career preparation. Upon completion, the student will be able to see the interrelationship between work and family life and develop skills necessary to function in an ever-changing society.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	091	Vocational Home Economics
	092	Middle School Home Economics
	214	Family & Consumer Science
	215	Family & Consumer Science

**399010 Information Technology: Fundamentals**

Credit: Grade Levels: 8

Information Technology: Fundamentals will provide students with the opportunity to learn about computer and networking information and to practice these basic technological concepts. This is not an industry-level certified course but rather an opportunity to assist in making immediate course selections and future career choices and gaining an exposure to technical life skills.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

224	Business Technology
032	Business Education
033	Middle School Business
031	Business Education (Secretarial)
034	Data Processing/Computer Permit
037	Computer Tech Permit

**399030 Intro to World Agriculture Science**

Credit: Grade Levels: 7-8

This is a foundation course for agriculture courses. Basic agriculture concepts are introduced, and students explore careers in the agriculture industry. Students will also be introduced to the FFA, leadership, and Supervised Agricultural Experiences.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

010	Agriculture
217	Agricultural Sciences & Technology
218	Agricultural Sciences & Technology

**399050 Keyboarding (7-8 grade)**

Credit: Grade Levels: 7-8

Keyboarding is a one-semester course designed to help students develop speed and accuracy by learning the touch operation of alphanumeric/keyboard characters. Emphasis is placed on the following: mastery of the keyboard with desirable keyboarding techniques; development of speed and accuracy; basic problem-solving applications of centering and arranging reports, letters, and tables; proofreading; formatting; and proper care of the equipment. Keyboarding is a foundation for developing entry-level skills for business careers.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
033	Middle School Business
224	Business Technology
225	Business Technology

**399060 Keyboarding Applications (7-8 grade)**

Credit: Grade Levels: 7-8

Keyboarding Applications is a one-semester course designed to further develop keyboarding skills. Emphasis is placed on the following: developing speed and accuracy; proofreading; producing mailable copy from rough drafts; preparing handwritten and statistical documents; and improving production of various types of business communications.

Keyboarding Applications provides the skills and knowledge necessary for entry-level employment for business careers.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:

031	Business Education (Secretarial)
032	Business Education
033	Middle School Business
224	Business Technology
225	Business Technology

**399090 Leadership & Service Learning (7-8 grade)**

Credit: Grade Levels: 7-8

Leadership and Service Learning emphasizes the importance of leadership skills, volunteerism, and professionalism in the development of personal qualities. It focuses on the benefits of community service, leadership roles, and civic responsibilities. Current technology is used to enhance communication skills and promote professionalism.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	091	Vocational Home Economics
	092	Middle School Home Economics
	214	Family & Consumer Science
	215	Family & Consumer Science

**Gateway to Technology****399110 Automation and Robotics**

Credit: 1 Grade Levels: 7-8

Students trace the history and development of automation and robotics. They learn about structures, energy transfer, and machine automation. They also find out what they need to study in high school and beyond to prepare for careers in engineering.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 606 Engineering Professions

**399120 Design and Modeling**

Credit: 1 Grade Levels: 7-8

Students will learn the uses of solid modeling. They will be introduced to the design process and shown how this technology has influenced their lives. Using design briefs or abstracts, students create models and documentation to solve problems.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 606 Engineering Professions

**399130 The Magic of Electrons**

Credit: 1 Grade Levels: 7-8

Students see the wonders of electricity and electronics by designing simple circuits and exploring the impact of electricity on our lives.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 606 Engineering Professions

**399140 The Science of Technology**

Credit: 1 Grade Levels: 7-8

Students trace how science has affected technology throughout history. Students learn about the mechanics of motion, the conversion of energy, and the use of science to improve communication.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: 606 Engineering Professions

**399200 DWE-Approved Career & Technical Education**

Credit: 1 Grade Levels: 7-8

This is a specialized CTE course for which the district must submit a framework and receive approval to teach. District must have a letter on file to use this course code.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course: ANY Technical and Professional Permit

**399150 EITE I (7-8 grade)**

Credit: .5 Grade Levels: 7-8

Exploring Industrial Technology Education (EITE) is an instructional program that has an intent to develop initial technological literacy through the student completing exploratory modules clustered around four technology occupation themes.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	100	Industrial Arts I
	101	Middle School Industrial Arts
	102	Industrial Arts II
	211	Industrial Tech Education
	212	Industrial Tech Education
	579	Exploring Industrial Technology

**399160 EITE II (7-8 grade)**

Credit: .5 Grade Levels: 7-8

Exploring Industrial Technology Education (EITE) is an instructional program that has an intent to develop initial technological literacy through the student completing exploratory modules clustered around four technology occupation themes.

Does course count in required 38 units and, if yes, how: No

Does course count in the 21 units required for graduation: No

Licensure required to teach this course:	100	Industrial Arts I
	101	Middle School Industrial Arts
	102	Industrial Arts II
	211	Industrial Tech Education
	212	Industrial Tech Education
	579	Exploring Industrial Technology



**TECHNOLOGY STANDARDS  
2005-2006**

**COMPUTER SYSTEM FOR: MIDDLE SCHOOL  
JR HIGH SCHOOL  
HIGH SCHOOL  
INSTRUCTOR/TEACHER**

**LEVEL I**

Pentium® 4 processor (or equivalent) 2.80GHz, 800 MHz, 512K cache, 512MB DDR RAM, 17" CTL, true flat panel color monitor or 17" CRT true flat screen monitor, integrated video graphics card, 40GB hard drive, 1.44MB 3.5-inch floppy drive, USB 2-button optical mouse with scroll, integrated (10/100/1000) network card, 52x32x52X DVDRW OR 48x or 52x CDRW-ROM, integrated sound blaster compatible, speakers w/headphones, Internet accessible

AGRICULTURAL SCIENCE	BUSINESS/MARKETING	CAREER GUIDANCE
Agribusiness Systems	CT: Intro	Career Orientation
Power, Structural, & Tech Systems	Computer Business Apps.	Internship
Animal Systems	Finance	Keystone
Plant Systems (Biological)	Hospitality	Workplace Readiness
Plant Systems (Horticulture)	Keyboarding	
Natural Resources/Environmental Serv Syst	Management	
	Marketing Technology	
	Office Administration	
	Tourism	
	Word Processing I & II	
FAMILY & CONSUMER SCIENCES	SPECIAL POPULATIONS	TECHNICAL & PROFESSIONAL
Childcare Guidance, Mgmt., & Services	JAG	Automotive Service Technology
Cosmetology	PROVE	Aviation Mechanics
Culinary Arts	STRIVE	Collision Repair Technology
Education & Training		Computer Engineering
Family & Consumer Sciences		Construction Technology
Lodging Management		Diesel Mechanics
Food Production, Mgmt., & Services		Electronics
		Exploring Industrial Tech Ed.
		Furniture Manufacturing
		HVACR
		Industrial Equipment Maint.
		JROTC
		Major Appliance Repair
		Machine Tool Technology
		Medical Professions Education
		Physics in Context
		Power Equipment Technology
		Welding Technology

**TECHNOLOGY STANDARDS  
2005-2006**

**COMPUTER SYSTEM FOR:   PROGRAM SPECIFIC  
  INSTRUCTOR/TEACHER**

**LEVEL II**

Pentium® 4 processor (or equivalent) 3.20GHz, 800MHz, 512K cache, 1 GB DDR RAM, 17" CTL, LCD flat panel color display, integrated video graphics card, (2) 80GB hard drives, 1.44MB 3.5-inch floppy drive, USB 2-button optical mouse with scroll, integrated (10/100/1000) network card, 48X or 52X DVD+R, DVD writer 48X or 52X CD ROM, integrated sound blaster compatible, speakers w/headphones, Internet accessible

BUSINESS/MARKETING	CAREER GUIDANCE	TECHNICAL & PROFESSIONAL
Desktop Publishing	Advertising Design	Criminal Justice
Multimedia	Career Communications (Pilot)	Drafting & Design
Programming	Graphic Communications	Geospatial Technology
	Radio/TV Broadcasting	Pre-engineering
		Gateway to Technology

**TECHNOLOGY STANDARDS  
2006-2007**

**COMPUTER SYSTEM FOR: MIDDLE SCHOOL  
JR HIGH SCHOOL  
HIGH SCHOOL  
INSTRUCTOR/TEACHER**

**LEVEL I**

Pentium 4, 3.0GHZ, 800 MHz, LGA775, mid tower ATX case, w/300w power supply, FUSB 80.0GB hard drive, 7200 rpm, 512 MB DDR2-533 RAM, integrated video graphics card, 17" monitor, true flat screen, color CRT (tube) 1.44 MB floppy drive, 104-key Win keyboard, optical wheel mouse w/pad, DVD/CDRW combo drive, 48x or 52x CD-ROM drive, integrated audio w/AC speakers & headphones, Microsoft Window XP Pro operating system, 10/100/1000 integrated network card

<b>Agricultural Science &amp; Technology</b>
<b>Agriculture, Food, &amp; Natural Resources Cluster</b>

<b>Business/Marketing Technology</b>
<b>Business Management &amp; Administration Cluster</b>
<b>Finance Cluster</b>
<b>Hospitality &amp; Tourism Cluster</b>
<b>Marketing Sales &amp; Service Cluster</b>

<b>Career Guidance, Exploration, &amp; Preparation</b>
<i>Career Orientation Course</i>
<i>Internship Course</i>
<i>Keystone Course</i>
<i>Workplace Readiness Course</i>

<b>Family &amp; Consumer Sciences</b>
<b>Education &amp; Training Cluster</b>
<b>Hospitality &amp; Tourism Cluster</b>
<b>Human Services Cluster</b>

<b>Technical &amp; Professional Education</b>
<b>Architecture &amp; Construction Cluster</b>
<b>Government &amp; Public Administration Cluster</b>
<b>Health Science Cluster</b>
<b>Manufacturing Cluster</b>
<b>Transportation, Distribution, &amp; Logistics Cluster</b>

<b>Support for Special Populations</b>
<i>JAG Course</i>
<i>STRIVE Course</i>

<b>TECHNOLOGY STANDARDS 2006-2007</b>
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**COMPUTER SYSTEM FOR: PROGRAM SPECIFIC  
INSTRUCTOR/TEACHER**

**LEVEL II**

Pentium 4, 3.20 GHz, 800MHz, LGA775, mid tower ATX case, w/300w power supply, FUSB (2) 80.0 GB hard drives, 7200 rpm, 1 GB DDR2-533 RAM, integrated video graphics card, 17" LCD flat panel color display, 1.44 MB floppy drive, multimedia keyboard, optical wheel mouse w/pad, DVD+R, DVD write, dual layer, 48x or 52x CD-ROM drive, integrated audio w/AC speakers & headphones, Microsoft Windows XP Pro operating system, 10/100/1000 integrated network card

<b>Business/Marketing Technology</b>
Information Technology Cluster

<b>Career Guidance, Exploration, &amp; Preparation</b>
Arts, A-V Technology, & Communications Cluster

<b>Technical &amp; Professional Education</b>
Architecture and Construction Cluster
Law, Public Safety, & Security Cluster
Science, Technology, Engineering, & Mathematics Cluster

## OFFICE OF AGRICULTURAL SCIENCE AND TECHNOLOGY EDUCATION

### STATE STAFF:

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### CAREER CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources

#### Program Description

Agricultural science and technology education is an organized educational program designed to provide career exploration and technical preparation for students who are preparing for career success in the Agriculture, Food, and Natural Resources Career Cluster. The knowledge and performance skills required for successful achievements and/or advancement in agricultural occupations constitute the central focus of the program.

#### Occupational Program

The Agriculture, Food, and Natural Resources Career Cluster offers sequential career focus programs of study in pathways.

Each local education agency should plan a program(s) of study to meet the needs of students in the community. Each program teaching agricultural power, structural, and technical systems must offer one additional program of study.

#### Student Organization

The career and technical student organization FFA shall be an integral part of the agriculture education instructional program and shall follow the applicable guidelines, goals, objectives, and participate in activities of the state and National FFA Organization.

## AGRICULTURE PREREQUISITES

COURSES	PRE-REQUISITE COURSE(S)
Advanced Animal Science	Animal Science
Agriculture Mechanics II	Agriculture Mechanics I
Agricultural Metals II	Agricultural Metals I
Agriculture Power Systems II	Agriculture Power Systems I
Agriculture Structure Systems II	Agriculture Structure Systems I
Biological Animal Science	Animal Science
Biological Plant Science	Plant Science

Programs of study (pathways):

Agribusiness Systems

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491030	Agricultural Business	.5			X	X	X	X
491060	Agricultural Marketing	.5			X	X	X	X
491150	Agriculture Science & Technology *	1			X	X	X	X

Power, Structural, and Technical Systems (Agricultural)

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491100	Agriculture Mechanics I	.5			X	X	X	X
491110	Agriculture Mechanics II	.5			X	X	X	X
491150	Agriculture Science & Technology	1			X	X	X	X

Animal Systems

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491150	Agriculture Science & Technology *	1			X	X	X	X
491180	Animal Science	.5			X	X	X	X
491200	Biological Animal Science	.5			X	X	X	X

Plant Systems (Biological)

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491150	Agriculture Science & Technology *	1			X	X	X	X
491210	Biological Plant Science	.5			X	X	X	X
491340	Plant Science	.5			X	X	X	X

Plant Systems (Horticulture)

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491150	Agriculture Science & Technology *	1			X	X	X	X
491270	Greenhouse Management	.5			X	X	X	X
491280	Intro to Horticultural Science	.5			X	X	X	X

# Natural Resource Systems/Environmental Service Systems

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491150	Agriculture Science & Technology *	1			X	X	X	X
491230	Environmental Resources	.5			X	X	X	X
491310	Managing Our Natural Resources	.5			X	X	X	X

\* Agriculture Science & Technology may be replaced by Agriculture Science as a core course if the agricultural power, structural, & tech systems program of study is not being offered.

## AGRICULTURE SCIENCE AND TECHNOLOGY COURSES:

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
491010	Advanced Animal Science	.5			X	X	X	X
491020	Agricultural Apprenticeship/Work-Based Learning	1					X	X
491030	Agricultural Business	.5			X	X	X	X
491040	Agricultural Electricity	.5			X	X	X	X
491050	Agricultural Graphics	.5			X	X	X	X
491060	Agricultural Marketing	.5			X	X	X	X
491070	Agricultural Metals I	.5			X	X	X	X
491080	Agricultural Metals II	.5			X	X	X	X
491090	Agricultural Surveying	.5			X	X	X	X
491100	Agriculture Mechanics I	.5			X	X	X	X
491110	Agriculture Mechanics II	.5			X	X	X	X
491120	Agriculture Power Systems I	.5			X	X	X	X
491130	Agriculture Power Systems II	.5			X	X	X	X
491140	Agriculture Science	.5			X	X	X	X
491150	Agriculture Science & Technology	1			X	X	X	X
491160	Agriculture Structural Systems I	.5			X	X	X	X
491170	Agriculture Structural Systems II	.5			X	X	X	X
491180	Animal Science	.5			X	X	X	X
491190	Aquaculture	.5			X	X	X	X
491200	Biological Animal Science	.5			X	X	X	X
491210	Biological Plant Science	.5			X	X	X	X
491220	Entrepreneurship	.5			X	X	X	X
491230	Environmental Resources	.5			X	X	X	X
491240	Floriculture	.5			X	X	X	X
491250	Food Science Technology	.5			X	X	X	X
491260	Forestry	.5			X	X	X	X
491270	Greenhouse Management	.5			X	X	X	X
491280	Intro to Horticulture	.5			X	X	X	X
491300	Leadership & Communications	.5			X	X	X	X
491310	Managing Our Natural Resources	.5			X	X	X	X
491330	Nursery/Landscape	.5			X	X	X	X
491340	Plant Science	.5			X	X	X	X
491350	Small Engine Technology	.5			X	X	X	X
491360	Turf Grass Management	.5			X	X	X	X

Course Code	Special Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Seek DWE prior approval before implementation.							
491370	DWE-Approved Agriculture	1			X	X	X	X
590050	DWE-Approved Agriculture	1			X	X	X	X
491320	DWE-Approved Meat Processing Laboratory	1			X	X	X	X

Course Code	DWE Middle School Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
399030	Intro to World Agriculture Science	.5	X	X				



## **AGRICULTURE SCIENCE AND TECHNOLOGY**

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

PATHWAY: AGRIBUSINESS SYSTEMS

PROGRAM OF STUDY: AGRIBUSINESS SYSTEMS

### **MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

<b>Item Number</b>	<b>Item Name</b>	<b>Number per Dept.</b>	<b>Specification/Description</b>
1	Computer system	20	See Technology Standards
2	Printer	5	

## AGRICULTURE SCIENCE AND TECHNOLOGY

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

PATHWAY: PLANT SYSTEMS (HORTICULTURE)

PROGRAM OF STUDY: PLANT SYSTEMS (HORTICULTURE)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Number per Dept.	Specification/Description
1	Greenhouse	1	Minimum of 1,800 sq.ft. w/environmental system
2	Worktables	2	4' x 8'
3	Soil sterilizer	1	¼-yard capacity
4	Soil test kit	1	
5	Microscopes	10	10x, 40x objectives
6	Water test kit	1	Nitrate, phosphate, & alkaline
7	Tiller	1	5 hp
8	Mower	1	
9	Grass trimmer	1	
10	Backpack blower	1	2-cycle
11	Table system for greenhouse	1	
12	Horticulture tool kit	1	
13	Plant/flower models	Set	
14	Emergency shower	1	
15	Plant growth chart	1	
16	Microscope, compound	1	

## AGRICULTURAL SCIENCE AND TECHNOLOGY

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES  
 PATHWAY: POWER, STRUCTURAL, AND TECHNICAL SYSTEMS (Agricultural)  
 PROGRAM OF STUDY: POWER, STRUCTURAL, AND TECHNICAL SYSTEMS (Agricultural)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Number Needed	Specification/Description
1	Oxyacetylene welding outfit	2	Single-stage installation A manifold
2	Oxyacetylene welding tables	2	
3	Anvil	1	70 lb.
4	Grinder/sander	1	7" disk
5	Bench grinder	1	1" x 7", 1/2 hp
6	Arc welder	2	225 amp, AC-DC
7	MIG welder	1	
8	Arc welding table	2	36" x 36"
9	Drill press	1	Floor model, 1/2"
10	Band saw	1	14", 1/2 hp, 115 v
11	Drill, electric	1	3/8"
12	Drill, electric	1	1/2" reversing, 5 amp/450 rpm
13	Electric handsaw	1	7"
14	Electric sander	1	4" belt
15	Saber saw	1	3"
16	Engine, air cool gas	2	4-cycle & 2-cycle
17	Micrometer, inside/outside	1	
18	Air compressor	1	150 psi, 80-gal. tank
19	Gun, spray paint	1	1 qt.
20	Table saw	1	10", 2 hp
21	Tap & die set	1	
22	Level, automatic pkg.	1	15 minutes (1/4") damping – air, suspension ball bearing
23	Planer	1	18"
25	Acetylene welding tool pkg.	1	
26	Arc welding tool pkg.	1	
27	Sheet metal tool pkg.	1	
28	Plumbing	1	
29	Concrete tool pkg.	1	
30	Cold metal tool pkg.	1	
31	Woodworking tool pkg.	1	
32	Power machines tool pkg.	1	
33	Electricity tool pkg.	1	
34	Small gas engines tool pkg.	1	
35	Surveying	1	
36	Agri graphics tool pkg.	1	
37	Eye protection cabinet	1	
38	Cabinets for each area	12	

Note: Same equipment is required regardless of class size.

## AGRICULTURE SCIENCE AND TECHNOLOGY

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

PATHWAY: NATURAL RESOURCE SYSTEMS/ENVIRONMENTAL SERVICE SYSTEMS

PROGRAM OF STUDY: NATURAL RESOURCE SYSTEMS/ENVIRONMENTAL SERVICE SYSTEMS

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Number per Dept.	Specification/Description
1	Clinometer	5	
2	Altimeter	5	
3	Land measuring wheel	1	
4	Tree injector	1	
5	Drip torch	1	
6	Firefighting pump	1	
7	Increment borer	1	
8	Tree marking gun	5	Backpack, 2-cycle
9	Mist blower	1	
10	Stereoscope	1	5" common field of view
11	Chainsaw	1	16", 2-cycle
12	Forestry instructional kit	1	
13	Safety equipment kit	1	
14	Wheeler caliper	1	
15	Relaskop	1	
16	Fire weather kit	1	
17	Compass	5	
18	GPS receiver	2	
19	Staff compass	1	
20	Laser level or automatic level	1	
21	Soil test kit	1	
22	Water test kit	1	

## AGRICULTURE SCIENCE AND TECHNOLOGY

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

PATHWAY: PLANT SYSTEMS (Biological)

PROGRAM OF STUDY: PLANT SYSTEMS (Biological)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Number Per Dept.	Specification/Description
1	Microscopes	10	10x, 40x objectives
2	Soil tester	1	
3	Water test kit	1	
4	Light meter	1	0-2,000 foot candles
5	Environmental chamber	1	
6	Hydroponic tabletop unit	1	Double unit
7	Indoor growing lab	1	Aluminum frame, timer on light, 4' adjustable fluorescent lights
8	Teaching microscope	1	
9	Air pollution test kit	1	
10	Deep soil corning tube	1	
11	Classroom aquaculture system	1	
12	Environmental data logger	1	
13	pH meter	1	

## **AGRICULTURE SCIENCE AND TECHNOLOGY**

CLUSTER: AGRICULTURE, FOOD, AND NATURAL RESOURCES

PATHWAY: ANIMAL SYSTEMS

PROGRAM OF STUDY: ANIMAL SYSTEMS

### **MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

<b>Item Number</b>	<b>Item Name</b>	<b>Number Per Dept.</b>	<b>Specification/Description</b>
1	Incubator, teaching unit	1	
2	Aquarium kit, ecosystem	1	
3	Refrigerator	1	
4	Microwave oven	1	
5	Food grinder	1	
6	Teaching microscope	1	
7	Air pollution test kit	1	
8	Deep soil corning tube	1	
9	Classroom aquaculture system	1	
10	Environmental data logger	1	
11	pH meter	1	

## OFFICE OF BUSINESS/MARKETING TECHNOLOGY

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### CAREER CLUSTERS: BUSINESS, MANAGEMENT, AND ADMINISTRATION; FINANCE; HOSPITALITY AND TOURISM; AND INFORMATION TECHNOLOGY

#### BUSINESS TECHNOLOGY

##### Program Description

Business technology programs are designed to prepare individuals to perform managerial, research, and technical support functions related to production and buying as well as selling goods and services.

Technical support functions include word processing and data-entry skills, use of the latest in modern business equipment, communication, and accounting skills. Business information processing includes the skills to process and retrieve internal business information and respond to external data requests. Enterprise management prepares individuals to develop, own, and operate businesses, including the applications of doing business in international markets and finance.

##### Occupational Program

Business technology has four career clusters from which students may choose. Specific courses are required for each of the programs of study (pathways); in addition, various options may be selected to complete the required curriculum.

##### Career Focuses

The program framework for secondary education and training is designed for linkage/ articulation to postsecondary programs of study. All curriculums adhere to the workforce training requirements for increased levels of technical skills and stronger foundations in applied academics. Program offerings in each school must include a minimum of one career focus/program of study.

##### Length of Courses and Eligibility of Students

Length of courses and eligibility of students are shown on the Business/Marketing Technology Program framework and course offerings immediately following.

## Student Organizations

The career and technical student organization Future Business Leaders of America (FBLA) shall be an integral part of the business technology instructional program and shall follow the guidelines, goals, objectives, and shall participate in activities of the state and national organization.

## MARKETING TECHNOLOGY

### CLUSTER: MARKETING, SALES, AND SERVICE

Planning, managing, and performing marketing activities to reach organizational objectives

#### Program Description

Marketing technology provides instruction that prepares individuals to plan and execute, at the operational or direct sales level, the promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives. Marketing tasks will include segments of the apparel and fashion industry, retailing of food, real estate, tourism, vehicle and petroleum operations, as well as developing business enterprises.

#### Occupational Program

One career focus program of study (pathway) is provided for students in this cluster, but several options are available as individual drawing boards are developed. The two two-semester capstone courses are Marketing and Marketing Management. In addition to the core marketing courses, related classes may be selected from those listed below in Optional Courses.

The career focus program of study for marketing technology is based on three broad competency areas that are essential for success in any marketing occupation—economic fundamentals of marketing; human resource foundation; marketing and business foundations.

#### Program Framework

The two sequential courses, Marketing and Marketing Management, are designed to give a good foundation for all students to explore and gain skills and knowledge in the occupational field of marketing and management. School-based instruction is provided for all students. For those students who desire work experience as a part of their educational program, a cooperative component is available. It is not required for all students but is desirable for many of them.

Cooperative education combines classroom instruction with alternating periods of on-the-job training in marketing occupations related to the student's career goal. Training sponsors are selected to coordinate the learning experiences provided on the job. Training plans are developed cooperatively by the teacher/coordinator and the training sponsor to ensure the development of required competencies.

#### Optional Courses

Courses such as advertising, desktop publishing, enterprise management, fashion merchandising, international business, retailing, salesmanship, hospitality and tourism, or lodging management may be offered in any marketing education program. Courses may combine classroom instruction with supervised laboratory activities designed to help the student achieve his or her career goal. The laboratory experiences may include marketing



simulations, operation of a school store, motel, boutique, parts warehouse, or a student bank within the educational institution.

#### Length of Program

1. Marketing and Marketing Management shall both be one-year courses.
2. Optional courses may be offered on a one- or two-semester basis.

#### Eligibility of Students

1. Marketing is available for grades 11-12.
2. Marketing Management is available for grades 11-12. Students on block schedule can take Marketing Management in the 11<sup>th</sup> grade if they take Marketing first term and Marketing Management second term.
3. Optional courses are available for grades 10-12.
4. Cooperative students must be 16 years of age to meet labor law requirements.
5. Students must have an occupational objective in the field of marketing.
6. If possible, cooperative students should be placed in an approved marketing technology training station before school starts.

#### Student Organization

The student organization DECA, an association of marketing students, shall be an integral part of the marketing technology program and shall follow the same guidelines, goals, objectives, and shall participate in activities of the Arkansas association and the national DECA organization.

## BUSINESS/MARKETING PREREQUISITES

**All courses require Foundation: Career Orientation (7<sup>th</sup> or 8<sup>th</sup> grade); Keyboarding (7<sup>th</sup> or 8<sup>th</sup> grade); CT: Intro (or substitute) (7<sup>th</sup> or 8<sup>th</sup> grade); IT: Fundamentals-Pilot (8<sup>th</sup> grade only)**  
**Keyboarding must be completed before CT: Intro (or substitute)**

Course	Prerequisite Course(s)
Banking & Finance Operations/Teller Training	Banking & Finance Principles
Banking & Finance Principles	Computerized Accounting I (suggested)
Banking & Finance Consumer Lending	Computerized Accounting I (suggested)
Banking & Finance Law	Banking & Finance Principles
Business Law II	Business Law I
Computerized Accounting II	Computerized Accounting I
Desktop Publishing I	Word Processing I (or Computerized Business Applications)
Desktop Publishing II	Word Processing I (or Computerized Business Applications) Desktop Publishing I
Enterprise Management II	Enterprise Management I
Multimedia Applications I	Word Processing I & Word Processing II (or Computerized Business Applications) Desktop Publishing I
Multimedia Applications II	Word Processing I & Word Processing II (or Computerized Business Applications) Desktop Publishing I Multimedia Applications I
Office Education Apprenticeship/ Work-Based Learning (COE)	Word Processing I Word Processing II (or Computerized Business Applications)
Office Management	Word Processing I & Word Processing II (or Computerized Business Applications)
Programming II	Programming I
Programming III	Programming II
Rapid Writing II	Rapid Writing I
Word Processing II	Word Processing I
Marketing Management	Marketing
Computer Applications II	Computer Applications I
Computer Applications III	Computer Applications I Computer Applications II
Advanced Database & Spreadsheets	Computer Applications I Computer Applications II Computer Applications III
Web Design & Multimedia Production	Computer Applications I Computer Applications II Computer Applications III
Senior Technology Seminar	Computer Applications I Computer Applications II Computer Applications III
International Travel	Intro to Travel/Tourism
Intro. to Travel/Tourism	WPI or CBA or CA I, II
Intro. to Hospitality	International Travel
Oracle Internet Academy	CBA or CA I, II, III Database Fundamentals I & II Java I & II
Travel Operations	Intro to Hospitality

Pathways and programs of study by career cluster:

### **Business, Management, and Administration Cluster**

(Office Management, Management, Human Resource Management, or Business Law)

Business, Management, and Administration careers encompass planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. Business, Management, and Administration career opportunities are available in every sector of the economy.

#### Management Pathway Management Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492100	Computerized Accounting I	1				X	X	X
492320	Management	1					X	X
492470	Word Processing I **	.5			X	X	X	X
	<b>OR</b>							
492100	Computerized Accounting I	1				X	X	X
492170	Enterprise Management I	.5					X	X
492180	Enterprise Management II	.5					X	X
492470	Word Processing I **	.5			X	X	X	X
	<b>OR</b>							
492100	Computerized Accounting I	1				X	X	X
492200	Human Resources Management	1					X	X
492470	Word Processing I **	.5			X	X	X	X
	<b>OR</b>							
492070	Business Law I	.5					X	X
492080	Business Law II	.5					X	X
492100	Computerized Accounting I	1				X	X	X
492470	Word Processing I **	.5			X	X	X	X

#### Administration & Information Support Office Administration Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492380	Office Management	1					X	X
492470	Word Processing I **	.5			X	X	X	X
492480	Word Processing II **	.5			X	X	X	X
	<b>OR</b>							
492130	Office Education Cooperative	1					X	X
492470	Word Processing I **	.5			X	X	X	X
492480	Word Processing II **	.5			X	X	X	X

### **Finance Cluster**

(Banking & Finance or Accounting core)

Planning, services for financial and investment planning, banking, insurance, and business financial management

#### Business Financial Management Pathway Finance Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492100	Computerized Accounting I	1				X	X	X
492110	Computerized Accounting II	1				X	X	X

Banking and Related Services Pathway  
Banking Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492020	Banking & Finance Consumer Lending	.5					X	X
492030	Banking & Finance Law	.5					X	X
492040	Banking & Finance Operations/Teller Training	.5					X	X
492050	Banking & Finance Principles	.5					X	X
492100	Computerized Accounting I	1				X	X	X

### Hospitality and Tourism Cluster

(Hospitality or Lodging Management core)

Hospitality & Tourism encompasses the management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation events, and travel-related services.

Travel and Tourism Pathway  
Hospitality Program of Study

Course Code	Hospitality Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492230	International Travel	.5				X	X	X
492250	Introduction to Hospitality	.5					X	X
492260	Introduction to Travel & Tourism	.5				X	X	X
492460	Travel Operations	.5					X	X
492470	Word Processing I **	.5			X	X	X	X

Travel and Tourism Pathway  
Lodging Program of Study

Course Code	Tourism Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492300	Lodging Management I	1				X	X	X
492310	Lodging Management II	1				X	X	X
492470	Word Processing I **	.5			X	X	X	X

### Information Technology Cluster

(Desktop Publishing, Multimedia Applications, or Programming core)

Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services

Interactive Media Pathway  
Desktop Publishing Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492150	Desktop Publishing I	.5				X	X	X
492160	Desktop Publishing II	.5				X	X	X
492470	Word Processing I **	.5			X	X	X	X
	<b>OR</b>							
492120	Computerized Business Applications	1			X	X	X	X
492150	Desktop Publishing I	.5				X	X	X
492160	Desktop Publishing II	.5				X	X	X

Interactive Media Pathway  
Multimedia Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492150	Desktop Publishing I	.5				X	X	X
492360	Multimedia Applications I	.5				X	X	X
492470	Word Processing I **	.5			X	X	X	X
	<b>OR</b>							
492120	Computerized Business Applications	1			X	X	X	X
492150	Desktop Publishing I	.5				X	X	X
492360	Multimedia Applications I	.5				X	X	X

Programming/Software Engineering Pathway  
Programming Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492120	Computerized Business Applications	1			X	X	X	X
492390	Programming I	.5			X	X	X	X
492400	Programming II	.5			X	X	X	X

Programming/Software Engineering Pathway  
Oracle Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492560	Database Fundamentals	.5					X	X
492570	Database Fundamentals	.5					X	X
492580	Introduction to JAVA	.5					X	X
492590	JAVA Programming	.5					X	X

## Marketing, Sales, and Service Cluster

Planning, managing, and performing marketing activities to reach organizational objectives

Marketing Information Management and Research Pathway  
Marketing Technology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492330	Marketing *	1					X	X
492350	Marketing Management *	1					X	X

\* Must have A.Y.A. Marketing License to teach these courses

\*\* May substitute Computerized Business Applications (1) for courses marked

**BUSINESS:**

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
690050	Keyboarding	.5			X	X	X	X
690060	Keyboarding Application	.5			X	X	X	X
492020	Banking & Finance Consumer Lending	.5					X	X
492030	Banking & Finance Law	.5					X	X
492040	Banking & Finance Operations/Teller Training	.5					X	X
492050	Banking & Finance Principles	.5					X	X
492060	Business Communications	.5				X	X	X
492070	Business Law I	.5					X	X
492080	Business Law II	.5					X	X
492100	Computerized Accounting I	1				X	X	X
492110	Computerized Accounting II	1				X	X	X
492120	Computerized Business Applications	1			X	X	X	X
492130	Office Education Cooperative	1					X	X
492140	Database Applications	.5				X	X	X
492560	Database Fundamentals	.5					X	X
492570	Database Programming	.5					X	X
492150	Desktop Publishing	.5				X	X	X
492160	Desktop Publishing II	.5				X	X	X
492170	Enterprise Management I	.5					X	X
492180	Enterprise Management II	.5					X	X
492200	Human Resources Management	1					X	X
492210	Insurance & Risk Management	.5					X	X
492220	International Business	.5					X	X
492240	Introduction to Finance	.5					X	X
492580	Introduction to JAVA	.5					X	X
492260	Introduction to Travel & Tourism	.5				X	X	X
492230	International Travel	.5				X	X	X
492250	Intro to Hospitality	.5					X	X
492590	JAVA Programming	.5					X	X
492300	Lodging Management I	1					X	X
492310	Lodging Management II	1					X	X
492320	Management	1					X	X
492360	Multimedia Applications I	.5				X	X	X
492370	Multimedia Applications II	.5				X	X	X
492380	Office Management	1					X	X
492620	Office Education Work Based Learning	1					X	X
492390	Programming I	.5			X	X	X	X
492400	Programming II	.5			X	X	X	X
492410	Rapid Writing I	.5				X	X	X
492420	Rapid Writing II	.5				X	X	X
492450	Spreadsheet Applications	.5				X	X	X
492460	Travel Operations	.5					X	X
492470	Word Processing I **	.5			X	X	X	X
492480	Word Processing II **	.5			X	X	X	X

\* Must have A.Y.A. Marketing License to teach these courses

\*\* May substitute Computerized Business Applications (1) for courses marked

**MARKETING:**

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
492010	Advertising	.5				X	X	X
492190	Fashion Merchandising	.5				X	X	X
492230	International Travel	.5				X	X	X
492250	Introduction to Hospitality	.5					X	X
492260	Intro to Travel & Tourism	.5				X	X	X
492330	Marketing *	.5					X	X
492340	Marketing Apprenticeship/Work Based Learning	.5					X	X
492350	Marketing Management *	.5						X
492430	Retailing	.5				X	X	X
492440	Salesmanship	.5				X	X	X

\* Teacher must have A.Y.A. Marketing License

Course Code	Other Business/Marketing Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Seek DWE prior approval before implementation							
399020	Computer Applications I	.5		X				
492530	Advance Database & Spreadsheets	.5					X	X
492600	Business Education	1			X	X	X	X
590070	Business Education	1			X	X	X	X
492490	Computer Applications I	.5			X	X	X	X
492500	Computer Applications II	.5			X	X	X	X
492510	Computer Applications III	.5			X	X	X	X
492610	Marketing Education	1			X	X	X	X
590080	Marketing Education	1			X	X	X	X
492520	Programming III	.5						X
492550	Senior Technology Seminar	.5						X
492540	Web Design & Multimedia Production	.5					X	X

Course Code	Middle School Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
399040	Computer Technology: Intro	.5	X	X				
399050	Keyboarding	.5	X	X				
399060	Keyboarding Applications	.5	X	X				

Course Code	Other Middle School Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Seek DWE prior approval before implementation							
399010	Information Tech: Fundamentals	.5	X	X				
399020	Computer Applications I	.5		X				

## BUSINESS/MARKETING TECHNOLOGY

CLUSTERS: ALL  
PATHWAYS: ALL  
PROGRAMS OF STUDY: ALL

2005-2006

and

2006-2007

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

#### SR HIGH/JR HIGH/MIDDLE SCHOOL LEVEL

Item	Student Count			Specification/Description
	15	20	25	
Student computer systems	15	20	25	See Technology Standards – Level 1
Student computer stations	15	20	25	Minimum of 30" x 43" per station, keyboard height 26"-28"
Student posture chairs	15	20	25	Ergonomically designed w/strong back support, must be adjustable, classroom set
Teacher computer system	1	1	1	See Technology Standards
Teacher computer station	1	1	1	Minimum of 30" x 43" per station, keyboard height 26"-28"
Teacher posture chair	1	1	1	Ergonomically designed w/strong back support, must be adjustable
Teacher laser printer	1	1	1	
Digital camera	1	1	1	
Filing cabinets	2	2	2	4-drawer, lockable
Laser printer	1	1	1	
LCD projector	1	1	1	Minimum 1,000 ANSI lumens
Media cart	1	1	1	
Scanner	1	1	1	
TV	1	1	1	Minimum 27" screen
VCR/DVD player	1	1	1	



## BUSINESS/MARKETING TECHNOLOGY

CLUSTER: INFORMATION TECHNOLOGY  
PATHWAY: INTERACTIVE MEDIA  
PROGRAM OF STUDY: DESKTOP PUBLISHING  
PROGRAM OF STUDY: MULTIMEDIA

2005-2006

and

2006-2007

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item	Student Count			Specification/Description
	15	20	25	
Computer system	3	4	5	See Technology Standards – Level II Multimedia
DVD player	1	1	1	Multimedia
Digital video camcorder w/remote microphone	1	1	1	Multimedia
Printer, color laser	1	1	1	Desktop Publishing & Multimedia – color laser or printer/fax/copier/scanner combination
S-VHS (editing VCR)	1	1	1	Multimedia
Software (not included in equipment total) – latest version, appropriate to courses being taught (cost varies w/computer lab size & configuration)				<u>Desktop Publishing:</u> Microsoft Office, Corel WordPerfect Office, Adobe PageMaker, Illustrator, FrontPage, Adobe InDesign, Adobe Premiere, or equivalents  <u>Multimedia:</u> Microsoft Office, Corel WordPerfect Office, Adobe PageMaker, Illustrator, FrontPage, Adobe InDesign, HyperStudio, Adobe Premiere, or equivalents

**BUSINESS/BUSINESS/MARKETING TECHNOLOGY**

CLUSTER: MARKETING, SALES, AND SERVICE  
PATHWAY: MARKETING MANAGEMENT AND RESEARCH  
PROGRAM OF STUDY: MARKETING TECHNOLOGY

2005-2006 **ONLY**

**MINIMUM EQUIPMENT LIST FOR INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

Item	Student Count			Specification/Description
	15	20	25	
Student computer systems	3	4	5	See Technology Standards – Level 1
Student computer stations	3	4	5	Minimum of 30" x 43" per station, keyboard height 26"-28"
Student posture chairs	3	4	5	Ergonomically designed w/strong back support, must be adjustable, classroom set
Teacher computer	1	1	1	See Technology Standards
Teacher computer station	1	1	1	Minimum of 30" x 43" per station, keyboard height 26"-28"
Teacher posture chair	1	1	1	Ergonomically designed w/strong back support, must be adjustable
Teacher laser printer	1	1	1	
Digital camera	1	1	1	
Display case	1	1	1	
Laser printer	1	1	1	
LCD projector	1	1	1	Minimum 1,000 ANSI lumens
Media cart	1	1	1	
Scanner	1	1	1	
TV	1	1	1	Minimum 27" screen
VCR/DVD player	1	1	1	
Filing cabinets	2	2	2	4-drawer, lockable

## OFFICE OF FAMILY AND CONSUMER SCIENCES

### STATE STAFF

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### CAREER CLUSTERS: EDUCATION AND TRAINING; HOSPITALITY AND TOURISM; HUMAN SERVICES

#### Program Description

The mission of FACS is to prepare students for family life, work life, and careers in family and consumer sciences by providing opportunities to develop the knowledge, skills, attitudes, and behaviors needed for strengthening the well-being of individuals and families across the life span; becoming responsible citizens and leaders in family, community, and work settings; promoting optimal nutrition and wellness across the life span; managing resources to meet the material needs of individuals and families; balancing personal, home, family, and work lives; using critical and creative thinking skills to address problems in diverse environments; being successful in life management; developing employment and career plans; functioning effectively as providers and consumers of goods and services; appreciating human worth; and accepting responsibility for one's actions and success in family and work life.

#### Occupational Programs

Family and consumer sciences education consists of two types of courses

1. FACS courses that provide instructional programs, services, and activities designed to prepare youths and adults for family life and careers in family and consumer sciences.
2. Occupational FACS courses that are designed to assist students in the development of skills that will enable them to secure employment and advance in a chosen family and consumer sciences career. These include cosmetology; child care guidance, management, and services; culinary arts; education and training; food production, management, and services; and lodging management.

#### Career Focus Program of Study

Program offerings in each school should include at least one career focus program of study. Most schools offer a FACS program of study/career focus at this time. Those schools that have occupational FACS courses will be able to offer a second program of study.

The career focus program of study includes family and consumer sciences education.

## Length of Courses and Eligibility of Students

Length of courses and eligibility of students are shown on the FACS education framework at the end of this section.

## Student Organization

The career and technical student organization Family, Career, and Community Leaders of America (FCCLA) shall be an integral part of the FACS instructional program. All local chapters shall follow the guidelines, goals, objectives, and participate in activities of the state and national organization. Cosmetology programs should utilize SkillsUSA as their student organization.

Programs of study by career cluster:

### Education and Training Cluster

Planning, managing, and providing education and training services and related support services

Teaching and Training Pathway  
Education and Training Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493020	Child Development	.5			X	X	X	X
493240	Orientation to Teaching	1				X	X	X
	<b>Options</b>							
493080	Family & Consumer Sciences	1			X	X	X	X
493150	Human Relations	.5			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493210	Parenting	.5			X	X	X	X
ADE or other DWE courses may be used as additional options with prior approval from the FACS program manager.								

### Hospitality and Tourism Cluster

Hospitality and tourism encompasses the management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation, and travel-related services

Restaurant and Food and Beverage Services Pathway  
Culinary Arts Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493250	Introduction to Culinary Arts	.5			X	X		
493260	Culinary Arts I	1				X	X	X
493270	Culinary Arts II	1				X	X	X
	<b>Options</b>							
493080	Family & Consumer Sciences	1			X	X	X	X
493110	Food & Nutrition	.5			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493200	Nutrition & Wellness *	.5			X	X	X	X
493220	ProStart I *	1					X	X
493230	ProStart II *	1					X	X
493130	Food Science *	.5				X	X	X
493060	FACS Apprenticeship/Work-Based Learning I	1					X	
493070	FACS Apprenticeship/Work-Based Learning II	1						X

Restaurant and Food and Beverage Services Pathway  
Food Production, Management, and Services Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493110	Food & Nutrition	.5			X	X	X	X
493120	Food Production, Management, & Services	1				X	X	X
	<b>Options</b>							
493250	Introduction to Culinary Arts	.5			X	X		
493080	Family & Consumer Sciences	1			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493200	Nutrition & Wellness *	.5			X	X	X	X
493220	ProStart I *	1					X	X
493230	ProStart II *	1					X	X
493130	Food Science *	.5				X	X	X
493060	FACS Apprenticeship/Work-Based Learning I	1					X	
493070	FACS Apprenticeship/Work-Based Learning II	1						X

Lodging Pathway  
Lodging Management Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493140	Housing & Interior Design	.5			X	X	X	X
493170	Lodging Management I	1					X	X
493180	Lodging Management II	1					X	X
	<b>Options</b>							
493080	Family & Consumer Sciences	1			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493190	Managing Resources	.5			X	X	X	X
493060	FACS Apprenticeship/Work-Based Learning I	1					X	
493070	FACS Apprenticeship/Work-Based Learning II	1						X

**Human Services Cluster**

Preparing individuals for employment in career pathways that relate to families and human needs

Early Childhood Development & Services Pathway  
Child Care Guidance, Management, and Services Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493020	Child Development	.5			X	X	X	X
493210	Parenting	.5			X	X	X	X
493010	Child Care Guidance, Management, & Services	1				X	X	X
	<b>Options</b>							
493080	Family & Consumer Sciences	1			X	X	X	X
493100	Family Dynamics	1			X	X	X	X
493150	Human Relations	.5			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493190	Managing Resources	.5			X	X	X	X
493200	Nutrition & Wellness *	.5			X	X	X	X
493060	FACS Apprenticeship/Work-Based Learning I	1					X	
493070	FACS Apprenticeship/Work-Based Learning II	1						X

Family & Community Services Pathway  
Family and Consumer Sciences Education Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493080	Family & Consumer Sciences	1			X	X	X	X
	<b>Options</b>							
493190	Managing Resources	.5			X	X	X	X
493150	Human Relations	.5			X	X	X	X
493020	Child Development	.5			X	X	X	X
493210	Parenting	.5			X	X	X	X
493160	Leadership & Service Learning *	.5			X	X	X	X
493100	Family Dynamics	1			X	X	X	X
493200	Nutrition & Wellness *	.5			X	X	X	X
493030	Clothing Management	.5			X	X	X	X
493110	Food & Nutrition	.5			X	X	X	X
493130	Food Science*	.5				X	X	X
493140	Housing & Interior Design	.5			X	X	X	X

Personal Care Services Pathway  
Cosmetology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494550	Cosmetology I	1				X	X	X
494570	Cosmetology II	2					X	X
	<b>Options</b>							
494560	Cosmetology Lab	1				X	X	X

Special Certification and Licensure Requirements

1. Meet the certification requirements for technical and professional education
2. Licensed by the Arkansas State Board of Cosmetology (licensure in cosmetology may substitute for the NOCTI examination)
3. Hold a current cosmetology instructor's license issued by the Arkansas State Board of Cosmetology

## FAMILY AND CONSUMER SCIENCES COURSES:

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493020	Child Development	.5			X	X	X	X
493030	Clothing Management	.5			X	X	X	X
493060	FACS Apprenticeship/Work-Based Learning I ****	1					X	X
493070	FACS Apprenticeship/Work-Based Learning II ****	1						X
493080	Family & Consumer Sciences	1			X	X	X	X
493100	Family Dynamics	1			X	X	X	X
493110	Food & Nutrition	.5			X	X	X	X
493140	Housing & Interior Design	.5			X	X	X	X
493150	Human Relations	.5			X	X	X	X
493190	Managing Resources	.5				X	X	X
493210	Parenting	.5			X	X	X	X
493220	ProStart I	1					X	X
493230	ProStart II	1					X	X
494560	Cosmetology Lab	1				X	X	X

Course Code	Other Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Seek DWE prior approval before implementation.							
493280	Family & Consumer Sciences	1			X	X	X	X
590060	Family & Consumer Sciences	1			X	X	X	X
493130	Food Science	.5				X	X	X
493160	Leadership & Service Learning	.5			X	X	X	X
493200	Nutrition & Wellness	.5			X	X	X	X
493220	ProStart I	1					X	X
493230	ProStart II	1					X	X

Course Code	Middle School Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
399070	Family & Consumer Sciences ***	1		X				
399080	Family & Work Connections **	.5	X	X				
399090	Leadership & Service Learning	.5	X	X				

\* Districts must have DWE prior approval to implement.

\*\* FACS career focus programs of study require that this foundation course be taught for program approval. Family and Consumer Sciences (one unit grades 9-12) may be used in substitution with prior written approval from the FACS program manager. If used as a foundation course, FACS (grades 9-12) may apply toward the three units required in the career focus program of study where allowed as an option for that career focus program of study.

\*\*\* FACS at the eighth-grade level will count as the core course for the FACS program of study, but students must still complete three other Carnegie units in the FACS program of study in grades 9-12 to be counted as a completer. FACS at the eighth-grade level may not be used as an option to be counted as a completer in any program of study. If FACS is taken by a student at the eighth-grade level, that student should not be allowed to repeat the course in grades 9-12.

\*\*\*\* Work-based learning courses are for use for student work release associated with an approved occupational program, including internship.

## FAMILY AND CONSUMER SCIENCES

CLUSTER: EDUCATION AND TRAINING  
 PATHWAY: TEACHING AND TRAINING  
 PROGRAM OF STUDY: EDUCATION AND TRAINING

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	27" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera	1	Multifunction, digital; case & strap
4	Digital video recorder	1	Multifunction, digital; case & strap
5	Scanner	1	
6	LCD projector	1	
7	Computerized presentation board	1	Sturdy, secure
8	Teacher management computer	1	Must meet current DWE specifications, including CD burner & presentation software; could be laptop or desktop (if laptop is purchased, it cannot replace separate laptop for student use)
9	Laptop computer	1	Must meet current DWE specifications, including CD/DVD drive, CD burner, & presentation software
10	Copy machine	1	Black-and-white, multifunction, efficient speed
11	Demonstration projector	1	Multiple settings, stable base, large platform
12	Classroom performance system	1	System includes software, 16 or 32 response pad system (depending on enrollment), receiver unit, & carrying case (software includes site license)
13	Laminator	1	18"-27"
14	Ellison die cutter	1	Assorted die cuts, durable, storage system for easy access & security
15	Poster printer	1	
9	Student computers	3	Must meet current DWE specifications, including CD/DVD drive, CD burner, & presentation software
10	Computer printer	1	Color, laser w/4 MG memory
11	Overhead projector	1	
12	Filing cabinet	2	Sturdy, lockable, 4-drawer
13	Media storage center	1	Adjustable compartments for CD, DVD, VCR, & film storage
14	Computer tables	3	
15	Computer chairs	3	Adjustable



## FAMILY AND CONSUMER SCIENCES

CLUSTER: HOSPITALITY AND TOURISM  
PATHWAY: RESTAURANT AND FOOD AND BEVERAGE SERVICES  
PROGRAM OF STUDY: CULINARY ARTS

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE (15 students)

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape; case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy
9	36" commercial range	1	Gas or electric, 2 open burners, 24" griddle w/standard oven base; stainless front, sides, & backsplash
10	Convection oven	1	Gas or electric, single stack, solid-state controls, 60/40 independent doors
11	Dishwasher	1	Freestanding or under-counter, built-in electric booster, 30 racks per hour
12	Ice maker	1	Freestanding or under-counter, built-in bin, 95-145 lb. production per 24 hours
13	Refrigerator	1	Reach-in, 2-section, self-contained, stainless steel front, standard depth, full-height door, exterior dial-type thermometer, 1/2 hp compressor, casters
14	Freezer	1	Reach-in, 1-section, self-contained, stainless steel front, standard depth, full-height door, exterior dial-type thermometer, 1/2 hp compressor, casters
15	Ventilation exhaust & fire suppression	1	Stainless steel vent-a-hood, 48" x 192" x 30" w/fire suppression system per local code
16	Sink	1	3-compartment, stainless steel w/right drain board, 20" front to back x 16" wide compartment, 14" deep w/10" high splash, 24" drain board
17	Disposal	1	Food waste disposal, 1 hp
18	Dish tables	1	Fitted for under-counter dishwasher, stainless steel, 20" x 20" x 8" sink bowl, 9" H backsplash
19	Pre-rinse assembly	1	Deck or backsplash mount
20	Mixer w/stand	1	12-20 qt. tabletop commercial mixer; double hook, wire whip, & flat beaters; stainless steel stand, 30" x 36"
21	Cook's tables	2	3' x 5' minimum, stainless steel
22	Hot food table	1	Electric, 120 v portable, 58" x 22" x 34", 4 openings
23	Cold food bar	1	4', polyethylene construction, insulated, w/drain plug, tabletop model w/sneeze guard
24	Food processor	1	Commercial, 1.75 hp, w/attachments & blades
25	Commercial food slicer	1	1.7 hp, industry standard on safety, sturdy
26	Kitchen calculator	5	Easy-to-read LCD display, solar- or battery-operated
27	Proofing cabinet	1	
28	Food storage		
	Storage containers	3 ea.	Bain-Marie style, see-through or white, airtight seal: 2 qt., 3 1/2 qt., 6 qt., 12 qt., 22 qt.

Item Number	Item Name	Classroom Count	Specification/Description
	Dry goods storage	3 ea.	Airtight seal, see-through w/scoop: 4 qt., 2 qt., 1 qt.
29	<b>Small equipment</b>		
	Crockpots	4	
	Electric knife	1	
	Food processor	1	
	Can opener	1	
	Hand mixers	2	
	Portion scales	1	Portion scale – 1 lb. capacity by 1/2 oz.
	Utility scales	1	Utility scale – up to 60 lb. capacity
	Kitchen timers	2	Digital or manual, 1+ hour timer w/alarm
30	<b>Top-of-range cookware</b>		
	Stockpots	1 ea.	Aluminum, w/lids: 9 qt., 12 qt., 16 qt.
	Saute pans	1 ea.	W/lids: 10", 12"
	Fry pans/skillets	1 ea.	1 each of 7", 10", 14"
	Saucepans	1 ea.	Aluminum or stainless, w/lids: 1 1/2 qt., 2 qt., 4 qt.
	Cooling racks	4 ea.	Half-pan size, stainless
31	<b>Kitchen tools</b>		
	Dry measure cups	2 sets	Shape-retaining, stain-resistant, dishwasher-safe
	Liquid measure cups	1 ea.	1 cup, 2 cup, 1 qt., 2 qt.; temperature range: -40 F to 212 F
	Measure spoons	2 sets	
	Mixing bowls	2 ea.	Stainless steel: 1 qt., 2 qt., 3 qt., 5 qt., 13 qt., 20 qt.
	Spoons	4 of each	Commercial grade, stainless steel: solid, slotted, various lengths
	Wooden spoons	1 set	Various lengths
	Rubber spatula	1 set	Commercial grade, various lengths
	Dough scraper	2	Plastic
	Spreaders	3	Plastic
	Off-set spatulas	3	Stainless or plastic
	Rolling pin	2	Wooden or nonstick
	Pastry blender	2	
	Wisk or french whips	3	Stainless steel, varying sizes
	Spatulas & turners	5	Professional quality, varying sizes
	Pie server	4	
	Utility tongs	5	Professional quality, varying sizes
	Fork turners	2	Professional quality, varying sizes
	Griddle scraper	1	Professional quality
	Colander	2	Stainless or aluminum, various sizes
	Pastry brush	3	Professional quality
	Scoops	4 ea.	Professional quality, stainless steel: #30 & #8
	Ladles	2 ea.	Stainless steel: 11", 13"
	Cutlery	2 sets	Lockable carrying case, sharpener; knives: chef's, carving, carving fork, bread knife, meat cleaver, boning, paring, kitchen shears, utility scissors
	Pizza cutter	1	Professional quality
	Grater	2	Stainless steel, 4-sided
	Garnishing set	1	To include peeler, decorating knife, fruit decorator, melon baller, zester
	Vegetable peelers	2	
	Cutting boards	1 set	Color-coded, NSF-approved, non-absorbent, stain- & cut-resistant
	Thermometers	2 ea.	Instant-read: meat, candy/deep fry

Item Number	Item Name	Classroom Count	Specification/Description
32	<b>Shelving &amp; food transport</b>		
	Wire shelving	2	Shelving unit, 4-shelf, chrome or epoxy-coated, grate-style to allow for air-flow, rustproof
	Utility dolly	1	32" x 20", 3" casters, durable, nonskid platform
			Various sizes & shapes
33	<b>Serving &amp; presentation</b>		Slide-, chip-, & dent-resistant
	Hollowware/serving	4 ea.	Stainless steel, w/pan & cover
	Beverage serving tray	4	Stainless steel
	Chafing dish	2	Aluminum, 30-cup
	Beverage urn	2	Stainless or porcelain
	Coffee urn	1	Stainless, polished finish; to include solid spoons, slotted spoons, oval spoons, 2-tine fork, meat fork, ladle, turner, cake server, serrated knife, tongs
	Cream & sugar set	1	Stainless steel, w/covers & adapter bars; to include full-size 12" D, full-size 6" D, half-size 12" D, half-size 6" D, third-size 12" D, third-size 6" D
	Buffetware utensil set	2 ea.	
	Steam table pans	1 ea.	Rust-resistant lids
	Cake stand	1	Plastic construction
	Salt & pepper shakers	10 sets	Woven or vinyl construction
	Condiment caddies	10	Plastic construction, 2 qt.
	Bread, cracker basket	10	Service for 50 to include dinner plate, salad plate, coffee cup, & saucer
	Drink pitchers	6	Service for 50 to include knife, fork, spoon
	Dinnerware	1	Service for 50, 16 oz., glass or plastic
	Flatware	1	Variety sizes, colors; easy-care fabric, stain/odor-release, machine-washable, fade-resistant
	Beverageware	1	
	Table linens	5	Full- & half-size
34	<b>Bakeware</b>		Thin-style, deep-dish style, 14"
	Aluminum sheet pan	12 ea.	8" or 9" diameter x 2" deep
	Pizza pan	1 ea.	8" or 9" diameter
	Cake pan	3	24-cup
	Pie pan	2	Professional quality
	Muffin pan	1	Aluminum or stainless: 3 1/2 qt. & 6 1/2 qt.
	Loaf pan	3	11" x 17" aluminum
	Roast pan	1 ea.	8" or 9" diameter, aluminum
	Bake pan/casserole	7	
	Springform pan	4	55-gal., w/handles, to include twist on/off dolly w/swivel casters
35	<b>Safety/sanitation</b>		Various sizes to include pan, vegetable, nail
	Trash can	2	20 ea. towels, washcloths; white, cotton, bleachable
	Kitchen brush	3	White bib-style, 1 per student for largest class
	Kitchen towels	1 set	Rubber: medium & large
	Apron	1 set	Institutional grade, pair: medium & large
	Pot & sink gloves	1 ea.	Institutional grade, steam barrier
	Oven mitt	2 ea.	To fit either hand, machine-washable, bleachable: X-SM, medium, large
	Potholder	6	Rubber construction, holes for drainage, 3' x 5'
	Cut-resistant glove	1 ea.	
	Antiskid kitchen mat	2	Shelving unit, 4-shelf, chrome or epoxy-coated, grate-style to allow for air-flow, rustproof
	Chemical storage cabinet	1	30" x 24" x 65" locking cabinet

Item Number	Item Name	Classroom Count	Specification/Description
	Busing boxes	4	20" x 15" x 7"
	Broom	1	Corn bristle or plastic bristle
	Push broom	1	Heavy-duty, 18" floor push broom
	Mop bucket	1	Bucket, wringer combination, 35 qt. capacity
	Mop	1	Industrial grade, cotton
	Ice scoop w/holder	1	Free-standing or wall-mount, 32 oz.
	First aid kit	1	Wall-mounted, identifiable
	Glo-germ kit	1	
	Sanitizer test kit	1 kit	Quaternary, chlorine styles, w/holder
	Utility/service cart	1	Heavy-duty, 2-3 shelf, stainless or heavy-duty polyethylene, 300 lb. capacity.
	Dunnage rack	1	Aluminum or polyethylene construction, 30" x 18" x 8"
	Wall-mount shelving	2	Chrome or epoxy-coated, grate-style, 24" x 21" x 12"

## FAMILY AND CONSUMER SCIENCES

CLUSTER: HOSPITALITY AND TOURISM  
PATHWAY: RESTAURANT AND FOOD AND BEVERAGE SERVICES  
PROGRAM OF STUDY: FOOD PRODUCTION, MANAGEMENT, AND SERVICES

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

#### STANDARDS FOR NEW PURCHASES

NOTE: This list does not include basic equipment presumed to be in an existing FACS department. Purchases on this list are based on one commercial kitchen. Additional items from the FACS department will be used to support this program of study. For a list of these required items, refer to the FACS equipment list.

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape; case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy
9	36" commercial range	1	Gas or electric; 2 open burners; 24" griddle w/standard oven base; stainless front, sides, & backsplash
10	Convection oven	1	Gas or electric, single stack, solid-state controls, 60/40 independent doors
11	Dishwasher	1	Freestanding or under-counter, built-in electric booster, 30 racks per hour
12	Ice maker	1	Freestanding or under-counter, built-in bin, 95-145 lb. production per 24 hours
13	Refrigerator	1	Reach-in, 2-section, self-contained, stainless steel front, standard depth, full-height door, exterior dial-type thermometer, 1/2 hp compressor, casters
14	Freezer	1	Reach-in, 1-section, self-contained, stainless steel front, standard depth, full-height door, exterior dial-type thermometer, 1/2 hp compressor, casters
15	Ventilation exhaust & fire suppression	1	Stainless steel vent-a-hood, 48" x 192" x 30", w/fire suppression system per local code
16	Sink	1	3-compartment, stainless steel, w/right drain board, 20" front to back x 16" wide compartment, 14" deep, w/10" high splash, 24" drain board
17	Disposal	1	Food waste disposal, 1 hp
18	Dish table	1	Fitted for under-counter dishwasher, stainless steel, 20" x 20" x 8" sink bowl, 9" H backsplash
19	Pre-rinse assembly	1	Deck or backsplash mount

Item Number	Item Name	Classroom Count	Specification/Description
20	Mixer w/stand	1	12-20 qt. tabletop commercial mixer; double hook, wire whip, & flat beaters; stainless steel stand; 30" x 36"
21	Cook's table	2	3' x 5' minimum, stainless steel
22	Hot food table	1	Electric, 120 v portable, 58" x 22" x 34", 4 openings
23	Cold food bar	1	4', polyethylene construction, insulated, w/drain plug, tabletop model w/sneeze guard
24	Food processor	1	Commercial, 1.75 hp, w/attachments & blades
25	Commercial food slicer	1	1.7 hp, industry standard on safety, sturdy
26	<b>Food storage</b>		
	Storage containers	3 ea.	Bain-Marie style, see-through or white, airtight seal: 2 qt., 3 1/2 qt., 6 qt., 12 qt., 22 qt.
	Dry goods storage	3 ea.	Airtight seal, see-through w/scoop: 1 qt., 2 qt., 4 qt.
27	<b>Small equipment</b>		
	Crockpot	4	
	Electric knife	1	
	Food processor	1	
	Can opener	1	
	Hand mixer	2	
	Portion scale	1	Portion scale – 1 lb. capacity by 1/2 oz.
	Utility scale	1	Utility scale – up to 60 lb. capacity
	Kitchen timer	2	Digital or manual, 1+ hour timer w/alarm
28	<b>Top-of-range cookware</b>		
	Stockpot	1 ea.	Aluminum, w/lids: 9 qt., 12 qt., 16 qt.
	Sauté pan	1 ea.	W/lids: 10", 12"
	Fry pan/skillet	1 ea.	One each of 7", 10", 14"
	Saucepan	1 ea.	Aluminum or stainless, w/lids: 1 1/2 qt., 2 qt., 4 qt.
	Cooling rack	4 ea.	Half-pan size, stainless
29	<b>Kitchen tools</b>		
	Dry measure cup	2 sets	Shape-retaining, stain-resistant, dishwasher-safe
	Liquid measure cup	1 ea.	1 cup, 2 cup, 1 qt., 2 qt.; temperature range: -40 F to 212 F
	Measure spoon	2 sets	
	Mixing bowl	2 ea.	Stainless steel: 1 qt., 2 qt., 3 qt., 5 qt., 13 qt., 20 qt.
	Spoon	4 of each	Commercial grade, stainless steel: solid, slotted, various lengths
	Wooden spoon	1 set	Various lengths
	Rubber spatula	1 set	Commercial grade, various lengths
	Dough scraper	2	Plastic
	Spreader	3	Plastic
	Off-set spatula	3	Stainless or plastic
	Rolling pin	2	Wooden or nonstick
	Pastry blender	2	
	Wisk or french whip	3	Stainless steel, varying sizes

Item Number	Item Name	Classroom Count	Specification/Description
	Spatulas & turners	5	Professional quality, varying sizes
	Pie server	4	
	Utility tongs	5	Professional quality, varying sizes
	Fork turner	2	Professional quality, varying sizes
	Griddle scraper	1	Professional quality
	Colander	2	Stainless or aluminum, various sizes
	Pastry brush	3	Professional quality
	Ladle	2 ea.	Stainless steel: 11", 13"
	Cutlery	2 sets	Lockable carrying case, sharpener; knives: chef's, carving, carving fork, bread knife, meat cleaver, boning, paring, kitchen shears, utility scissors
	Pizza cutter	1	Professional quality
	Grater	2	Stainless steel, 4-sided
	Garnishing set	1	To include peeler, decorating knife, fruit decorator, melon baller, zester
	Vegetable peeler	2	
	Cutting board	1 set	Color-coded, NSF-approved, non-absorbent, stain- and cut-resistant
	Thermometer	2 ea.	Instant-read, meat, candy/deep fry
	Kitchen calculator	2	Easy-to-read LCD display, solar- or battery-operated
30	<b>Serving &amp; presentation</b>		
	Hollowware/serving	4 ea.	Various sizes & shapes
	Beverage serving tray	4	Slide-, chip-, & dent-resistant
	Chafing dish	2	Stainless steel, w/pan & cover
	Beverage urn	2	Stainless steel
	Coffee urn	1	Aluminum, 30 cup
	Cream & sugar set	1	Stainless or porcelain
	Buffet ware utensil set	2 ea.	Stainless, polished finish, to include solid spoons, slotted spoons, oval spoons, 2-tine fork, meat fork, ladle, turner, cake server, serrated knife, tongs
	Steam table pan	1 ea.	Stainless steel w/covers and adapter bars, to include full-size 12" D, full-size 6" D, half-size 12" D, half-size 6" D, third-size 12" D, third-size 6" D
	Cake stand	1	
	Salt & pepper shakers	10 sets	Rust-resistant lids
	Condiment caddies	10	Plastic construction
	Bread, cracker baskets	10	Woven or vinyl construction
	Drink pitchers	6	Plastic construction, 2 qt.
	Dinnerware	1	Service for 50 to include dinner plate, salad plate, coffee cup & saucer
	Flatware	1	Service for 50 to include knife, fork, spoon
	Beverageware	1	Service for 50, 16 oz., glass or plastic
	Table linens	5	Variety sizes, colors; easy-care fabric, stain/odor release, machine-washable, fade-resistant
31	<b>Bakeware</b>		
	Aluminum sheet pan	4 ea.	Aluminum, full- & half-size
	Pizza pan	1 ea.	Thin-style, deep dish-style, 14"

Item Number	Item Name	Classroom Count	Specification/Description
	Cake pan	3	8" or 9" diameter x 2" deep
	Pie pan	2	8" or 9" diameter
	Muffin pan	1	24 cup
	Loaf pan	3	Professional quality
	Roast pan	1 ea.	Aluminum or stainless, 3 1/2 qt. & 6 1/2 qt.
	Bake pan/casserole	2	11" x 17" aluminum
	Springform pan	1	8" or 9" diameter, aluminum
32	<b>Safety/sanitation</b>		
	Trash can	1	55-gal., w/handles, to include twist on/off dolly w/swivel casters
	Kitchen brushes	3	Various sizes to include pan, vegetable, nail
	Kitchen towels	1 set	20 ea.: towels, washcloths; white, cotton, bleachable
	Aprons	1 set	White bib-style, 1 per student for largest class
	Pot & sink gloves	1 ea.	Rubber, medium & large
	Oven mitt	2 ea.	Institutional-grade, pair, medium & large
	Potholder	6	Institutional-grade, steam barrier
	Cut-resistant glove	1 ea.	To fit either hand, machine-washable, bleachable; X-SM, medium, large
	Antiskid kitchen mat	2	Rubber construction, holes for drainage, 3' x 5'
	Chemical storage cabinet	1	30" x 24" x 65", locking cabinet
	Busing boxes	4	20" x 15" x 7"
	Broom	1	Corn bristle or plastic bristle
	Push broom	1	Heavy-duty, 18" floor push broom
	Mop bucket	1	Bucket/wringer combination, 35 qt. capacity
	Mop	1	Industrial-grade, cotton
	Ice scoop w/holder	1	Free-standing or wall-mount, 32 oz.
	First aid kit	1	Wall-mounted, identifiable
	Glo-germ kit	1	
	Sanitizer test kit	1 kit	Quaternary, chlorine styles, w/holder
	Utility/service cart	1	Heavy-duty, 2-3 shelf, stainless or heavy-duty polyethylene, 300 lb. capacity
	Dunnage rack	1	Aluminum or polyethylene construction, 30" x 18" x 8"
	Wall-mount shelving	2	Chrome or epoxy-coated, grate-style, 24" x 21" x 12"
33	<b>Shelving &amp; food transport</b>		
	Wire shelving	2	Shelving unit, 4-shelf, chrome or epoxy-coated, grate-style to allow for airflow, rust-proof
	Utility dolly	1	32" x 20", 3" casters, durable, nonskid platform



## FAMILY AND CONSUMER SCIENCES

CLUSTER: HOSPITALITY AND TOURISM  
PATHWAY: LODGING PATHWAY  
PROGRAM OF STUDY: LODGING MANAGEMENT

(Formerly – Facilities Management, Maintenance, and Services)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

The items on this list are for 15, 20, and 25 students, unless otherwise specified.

NOTE: This list does not include basic equipment presumed to be in an existing FACS department. Additional items from the FACS department will be used to support this program of study. For a list of these required items, refer to the FACS equipment list.

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/Player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy
9	Student computer system (15 students)	5	1 system must be dedicated to a mock registration desk; see Technology Standards
10	Student computer system (20 students)	6	1 system must be dedicated to a mock registration desk; see Technology Standards
11	Student computer system (25 students)	7	1 system must be dedicated to a mock registration desk; see Technology Standards
12	Printers (15 & 20 students)	3	1 printer must be dedicated to a mock registration desk
13	Printers (25 students)	4	1 printer must be dedicated to a mock registration desk
14	Office desk w/chair	1	Dedicated to mock registration; sturdy, professional, desk must lock, w/storage & room for computer & printer; chair must be adjustable & on wheels
15	Sofa bed	1	Full sleeper, 76" W x 38" D x 35" H or larger; semi-attached back, loose seat cushions, durable fabric
16	Commercial vacuum	1	Triple filtration system, automatic carpet height adjustment, built-in maid's cart, easy transport, onboard storage for attachments & supplies, long 2-wire cable (31 ft.)
17	Commercial floor polisher	1	20 in. brush pad diameter, 1.5 hp motor, adjustable handle, aluminum construction, sealed gear chamber, nonmarking wall bumper, 50-ft. cable
18	Commercial cleaning set	1 set	
	Broom	1	
	Dustpan	1	Large

Item Number	Item Name	Classroom Count	Specification/Description
	Carpet sweeper	1	
	Dust mop	1	Telescoping handle
	Lamb's wool duster	1	Telescoping handle
	Deck mop	1	
	Bucket	1	W/downward pressure wringer
19	<b>Maid's cart</b>	1	Sturdy w/multiple shelves or cabinet-style w/locks
20	<b>Bath linens set</b> (15 students)	15 sets	1 set per student
	Bath towels	2	
	Hand towels	2	
	Washcloths	4	
21	<b>Bath linens set</b> (20 students)	20 sets	1 set per student
22	<b>Bath linens set</b> (25 students)	25 sets	1 set per student
23	<b>Bed linens set</b>	1 set	
	Flat sheets	2	
	Pillowcases	2	
	Pillows	2	
24	<b>Storage cabinet</b>	1	Locking, sturdy, adjustable shelves, storage for linens & additional items
25	<b>Calculator</b>	1	10-key, multifunction, 2-color tape printout, digital display; dedicated to mock registration desk

## FAMILY AND CONSUMER SCIENCES

CLUSTER: HUMAN SERVICES  
 PATHWAY: EARLY CHILDHOOD DEVELOPMENT AND SERVICES  
 PROGRAM OF STUDY: CHILD CARE GUIDANCE, MANAGEMENT, AND SERVICES  
 (On-site Lab)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Note: This list does not include basic equipment presumed to be in an existing FACS department. Purchases on this list are based on an existing child care facility. Additional items from the FACS department will be used to support this program of study. For a list of these required items, refer to the FACS equipment list.

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy
9	Teacher storage	1	Sturdy, locking
10	First aid kit	1	Locked
11	Laminator	1	18"-27"
12	Ellison cutter (XL)/die cuts	1	Assorted die cuts
13	Storytelling easel	1	
14	Binding machine	1	
15	Copier	1	Black-and-white, multifunction
16	Clothes dryer	1	Multicycle
17	Washing machine	1	Multicycle
18	Sink	1	Meets Health Department specifications
19	Vacuum cleaner	1	6.5 amp upright or 3.5 peak hp canister
20	Teacher storage	1	Sturdy, locking
21	Fire extinguisher	1	Dry, multipurpose
22	First aid kit	1	Locked
23	Low hand-washing lavatory	1	1 per 15 children
24	Low drinking fountain	1	1 per 15 children
25	Tot toilet	1	1 per 15 children
26	Paper towel dispenser/forced air dryer	1	1 per 15 children
27	Microwave oven	1	700 watts
28	Institutional sink	1	Meets Health Department specifications
29	Garbage disposal	1	1hp
30	Range	1	4-burner, self-cleaning, vented
31	Refrigerator	1	2-door refrigerator/freezer, 21 cu. ft., frost-free

Item Number	Item Name	Classroom Count	Specification/Description
32	Children's chair	20	1 per child, tip-resistant
33	Children's table	5	Sturdy, lead-free finish, size adequate for each child to have work space
34	Highchair	10	1 per 2 children; sturdy construction, lead-free finish, safety strap or center pin
35	Changing table & storage center	1	Safety rail, washable surface
36	Feeding table/play table	1	6-seater
37	Crib	20	1 per child, crib & mattress should conform to all Consumer Products Safety Commission standards, casters, full vision
38	Infant swing	10	1 per 2 children, sturdy construction
39	Activity center	3	Stationary
40	Prewheel toys	10	1 per 2 children, (a variety) nonpedaling, safe, sturdy
41	Adult rocking chair	1	1 per 6 infants, sturdy, easy to maintain
42	Storage for infant/toddler supplies	1	Out of children's reach
43	Infant mirror	1	Unbreakable
44	Cot (or mat) w/sheets & storage	20	Cots: heavy-duty, standard, 1" 16-gauge aluminum frame; vinyl or canvas cover
45	Play equipment storage unit	1	
46	Play equipment set (outdoor)	1	Same as indoor set
47	Outside storage	1	To accommodate outside toys
48	Wheeled toys	1 set	A set includes 10 of the following: pedal toys, punch-pull toys, wagons, trikes, scooters, wheelbarrows
49	Covered sandbox	1	Smooth finish, 6" deep
50	Rocking toys	5	Sturdy, safe, lead-free finish
51	Outdoor swing	1 set	Meets licensing standards
52	Outdoor climber	1	Sturdy, safe
53	Sports equipment	1 set	To include soccer, basketball, football, baseball, etc.
54	Coat locker	2 (10 lockers each)	Storage w/hanging space for each child
55	Art center easel & storage	5	1 per 4-6 children w/shelves at child's height
56	Music/listening center & storage	1	Rhythm musical instruments, storage space for instruments, audio tapes, sturdy, safe
57	Block center & storage	1	Storage space for assorted blocks
58	Home living center & storage	1	Child-size table w/chairs, kitchen equipment, doll bed, child-size rocking chair, storage space for accessories; material and design may vary
59	Library center/bookshelves	1	Sturdy, child height to accommodate books, age-appropriate books
60	Puppet center	1	To include puppets, puppet theater
61	Math & science equipment set	1	Safe, sturdy, manipulatives

## **FAMILY AND CONSUMER SCIENCES**

CLUSTER: HUMAN SERVICES

PATHWAY: EARLY CHILDHOOD DEVELOPMENT & SERVICES

PROGRAM OF STUDY: CHILD CARE GUIDANCE, MANAGEMENT, AND SERVICES  
(Pre-employment Lab)

### **MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

#### **STANDARDS FOR NEW PURCHASES**

NOTE: This list does not include basic equipment presumed to be in an existing FACS department. Purchases on this list are based on an existing child care facility. Additional items from the FACS department will be used to support this program of study. For a list of these required items, refer to the Family and Consumer Sciences Education Equipment list.

<b>Item Number</b>	<b>Item Name</b>	<b>Classroom Count</b>	<b>Specification/Description</b>
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy
9	Teacher storage	1	Sturdy, locking
10	Laminator	1	18"-27"
11	Ellison cutter (XL)/die cuts	1	Assorted die cuts
12	Storytelling easel	1	
13	Binding machine	1	
14	Copier	1	Black-&-white, multifunction
15	Additional instructional equipment	1	Additional instructional items may be chosen from the FACS On-site Child Care Equipment List as necessary. These items may not be furniture, structural, or permanently placed in the center.

## FAMILY AND CONSUMER SCIENCES

CLUSTER: HUMAN SERVICES  
PATHWAY: PERSONAL CARE SERVICES  
PROGRAM OF STUDY: COSMETOLOGY

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Television/VCR/DVD	1	1	1	25"
Overhead projector w/screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Bowl, shampoo	5	7	10	W/sprayer
Cabinet	6	6	6	Chemical storage cabinet
Cabinet, towel storage	1	2	3	
Cash register	1	1	1	Digital
Chair, facial	1	2	3	
Chair, reception	2	2	2	
Chair, receptionist	1	1	1	
Chair, shampoo	5	7	10	
Chair, styling	10	10	10	Hydraulic/swivel
Computer system	1	2	3	See Technology Standards
Computer printer	1	2	3	
Computer, software	1	2	3	Specifically related to cosmetology
Cosmetology kit	15	20	25	To include cutting shears, thinning shears, cuticle nippers w/case, steel pusher, 8" nail file, tweezers, 2 manicure sticks, spatula, nail brush, 1 box (#5) emery boards, printed shampoo cape, triangle net, 1 box of 100 clippies, 1 box of 12 coiffure clippies, haircutting comb, styling comb, wave comb, tail comb, styling brush, hair shaper w/blades, roller roost w/10 dozen rollers, 5 dozen permanent rods
Desk, receptionist	1	1	1	
Display case	1	1	1	Glass-covered
Dryer	10	10	10	
Dryer, chair	10	10	10	
Lockers	3	4	5	6 lockers/unit
Manicure light	5	5	5	
Manicure station	5	5	5	
Sanitizer, ultraviolet	1	1	1	
Telephone	1	1	1	Touch-tone
Time clock	1	1	1	Electric, analog or digital
Work station, salon	10	10	10	W/mirror

## FAMILY AND CONSUMER SCIENCES

CLUSTER: HUMAN SERVICES  
PATHWAY: FAMILY AND CONSUMER SERVICES  
PROGRAM OF STUDY: FAMILY AND CONSUMER SCIENCES

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

The items on this list are for 15 students, unless otherwise specified.

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	27" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Sturdy
9	Teacher management computer	1	See Technology Standards
10	Student computers	3	See Technology Standards
11	Computer printer	1	
12	Overhead projector	1	
13	Filing cabinet	2	Sturdy, lockable, 4-drawer
14	Media storage center	1	Adjustable compartments for CD, DVD, VCR, & film storage
15	Demonstration table	1	For clothing or foods demonstrations; electrical outlet, overhead mirror, & casters
16	Garbage disposal	3	
17	Washer	1	Multicycle
18	Dryer	1	Multicycle
19	Serger	1	Differential feed, free arm, 3-5 thread
20	Sewing machine	8	Portable w/protective case, sufficient space for set-up (set-up options: 1 cabinet per machine, or 1 table per 2 machines, or custom counter space of 40" per machine)
21	Stools for sewing machine	8	
22	Pressing equipment set	3	
	Iron		Teflon-coated, steam/dry options, UL-listed, automatic shut off, self-cleaning

Item Number	Item Name	Classroom Count	Specification/Description
	Ironing board, pad, & cover		Standard-size board, Teflon-coated cover
	Dressmaker's ham		6" x 10" semi-flat bottom, molded polyurethane filler
	Sleeve roll		3" x 13 1/2" wool & cotton cover
	Pressing cloth		Cotton, silicone-treated, or see-through, 14" x 24"
23	<b>Cutting equipment set</b>	3	
	Pinking shears		9" length, nickel blade
	Scissors & shears		Variety of types & lengths, including left- & right-hand shears
24	<b>Special storage cabinet</b>	1	Tote tray storage, hanging space, minimum 30 slots
25	<b>Triple mirror</b>	1	Full length
26	<b>Cutting table</b>	3	Sturdy wood or metal (folding w/gravity lock slides) 36" x 72"
27	<b>Range/hood</b>	3	Electric or gas, self-cleaning or continuous cleaning
28	<b>Vacuum, upright</b>	1	Min. 6.5 amp, 3.5 peak hp
29	<b>Refrigerator</b>	2	19-25 cu. ft., adjustable shelves, ice maker
30	<b>Microwave oven</b>	3	1,000-1,500 watts, automatic sensors, turntable, multiple power levels, minimum 1.5 cu. ft. interior
31	<b>Convection oven</b>	1	1,300-1,500 watts, full range
32	<b>Breadmaker</b>	1	Completely automatic, 1 1/2 lb. loaf
33	<b>Dishwasher</b>	3	Adjustable upper rack, delay start, multiple cycle, quiet
34	<b>Stand mixer</b>	3	Heavy-duty; dough hook, whip, & beaters; large & small bowls
35	<b>Kitchen tools</b>		
	Measuring equipment set	3	Dishwasher-safe
	Mixing equipment set	3	Variety, dishwasher-safe
	Fruit/vegetable prep. set	3	Stain-resistant, dishwasher-safe
	Timer	3	60-minute, prolonged signal
	Cutlery set	3	Stain- & rust-resistant, to include chef, boning, bread, paring, carving, etc.
	Cake decorating set	2	Commercial quality
	Cookie/pastry press	2	Heavy-duty, stainless
	Gelatin mold set	2	Metal, variety of shapes & sizes
	Mixing bowl set	3	Graduated sizes, heat-resistant, dishwasher-safe
	Canister set	3	Airtight, rust-proof
36	<b>Oven baking equipment</b>		
	Baking sheet	6	Nonstick, dishwasher-safe
	Jellyroll pan	6	Nonstick, dishwasher-safe
	Cake pan	12	8" & 9", nonstick, dishwasher-safe
	Loaf pan	6	Nonstick, dishwasher-safe



Item Number	Item Name	Classroom Count	Specification/Description
	Muffin pan	6	6 cup, nonstick, dishwasher-safe
	Pie pan	6	9" & 10" nonstick, dishwasher-safe
	Tube pan	3	10" metal
	Oblong pan	3	9" x 13"
	Casserole dish	6	1 1/2 qt., 2 qt., covered
	Bundt pan	3	12 cup
	Springform pan	3	
	Microwave set	3	Several shapes & sizes
	Cooling rack	6	Metal
	Pizza pan	6	12" nonstick
37	<b>Range-top cooking equipment</b>		
	Double boiler	3	Heavy, 1 1/2 quart, w/lid
	Saucepan	12	3 qt., 4 qt., 6 qt., 8 qt., heavy w/lids
	Skillet	6	10" & 12", nonstick, w/lids
	Dutch oven	3	6 qt., heavy, w/lid
38	<b>Small electrical equipment</b>		
	Blender	3	12-speed, open at both ends
	Can opener	3	Opens odd-shaped & dented cans
	Coffee/tea maker	2	12 cup, warming plate
	Electric knife	3	Stainless steel, removable blades
	Electric skillet	3	Immersible, w/cover
	Food processor	3	Stainless steel blades
	Hand mixer	3	Stainless steel blades
	Toaster	3	4-slice, automatic
	Waffle maker	3	Nonstick, automatic temperature control
	Crockpot	3	Temperature control, 6-qt. removable crock
	Deep fryer	3	4 qt., automatic
	Omelet pan	3	Immersible, nonstick
	Hand vacuum	1	Wet/dry
39	<b>Dining set</b>	3	Sturdy table, six chairs scaled to floor space; classroom table & chairs may be substituted
40	<b>Kitchen linen set</b>		
	Aprons	20	Wash-&-wear, varying sizes
	Dishcloths	36	Washable, large
	Tea towels	36	Washable, lint-free

Item Number	Item Name	Classroom Count	Specification/Description
	Hot pad	12	Varying sizes
	Potholder	18	Washable, heavy-duty, large
41	<b>Table appointments</b>		
	Dinnerware set	3	Service for 8, dishwasher-safe
	Glassware set	3	Service for 8, dishwasher-safe
	Flatware set	3	Service for 8, dishwasher-safe
	Serving accessory set	3	Dishwasher-safe
	Tablecloth	3	Washable, no-iron
	Place mat set	3	Washable, no-iron
	Napkin set	3	Washable, no-iron
42	<b>Party appointments</b>		
	Punch bowl	1	8 qt., cut glass
	Platter	3	12"-16", glass
	Tray	3	12"-16", glass
	Bowl	2	4 qt., glass
	Pitcher	1	2 qt., glass
	Candy dish	4	6", glass
	Cups	50	Glass
	Plates	50	8", glass
	Ladle	1	Glass
	Tablecloth	2	Lace, cutwork, or quality linen
	Coffee maker	1	Automatic, 55 cup

## FAMILY AND CONSUMER SCIENCES

### Standards for New Instructional Equipment and Software Purchases

ITEM NO.	ITEM NAME	CLASSROOM COUNT	SPECIFICATIONS/DESCRIPTIONS
1	Combination TV/VCR/DVD or TV & VCR/DVD w/cart	1	25" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer tables	3	
6	Computer chairs	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Locking, portable, sturdy

# FAMILY AND CONSUMER SCIENCES

## FAMILY AND WORK CONNECTIONS

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Number	Item Name	Classroom Count	Specification/Description
1	Combination TV/VCR/DVD or TV & VCR/DVD w/ cart	1	27" TV screen, either wall-mounted or portable w/cart, cabinet, or stand; 3-speed recording/playback, remote control
2	Cassette/CD player	1	Recorder/player
3	Digital camera or video camera	1	Multifunction, digital or VCR tape, case & strap
4	Scanner	1	
5	Computer table	3	
6	Computer chair	3	Adjustable
7	LCD projector	1	
8	Computerized presentation board	1	Sturdy
9	Teacher management computer	1	Must meet current DWE specifications; could be laptop or desktop
10	Student computer	3	Must meet current DWE specifications
11	Computer printer	1	Color, laser with 4 MG memory
12	Overhead projector	1	
13	Filing cabinet	2	Sturdy, lockable, 4-drawer
14	Media storage center	1	Adjustable compartments for CD, DVD, VCR, & film storage
15	Demonstration table	1	For clothing or foods demonstrations; electrical outlet, overhead mirror, & casters; onboard cooktop & water supply
16	Additional storage/ demonstration unit	1	Multiple storage areas & types, locking, sturdy, easy access during demonstrations; may be additional basic demo table or built-in counter storage
17	Serger	1	Differential feed, free arm, 3-5 thread
18	Sewing machine	5	Portable w/protective case, sufficient space for set-up (set-up options: 1 cabinet per machine, or 1 table per 2 machines, or custom counter space of 40" per machine)
19	Stools for sewing machine	5	
20	Pressing equipment set		
	Iron	2	Teflon-coated, steam/dry options, UL-listed, automatic shut off, self-cleaning
	Ironing board, pad, & cover	2	Standard size board, Teflon coated cover
	Pressing cloth	5	Cotton, silicone-treated, or see-through; 14" x 24"
21	Cutting equipment set		
	Pinking shears	3	9" length, nickel blade
	Scissors & shears	10	Variety of types & lengths, including left- & right-hand shears
22	Cutting table	1	Sturdy wood or metal (folding w/gravity lock slides) 36" x 72"
23	Special storage cabinet	1	Tote tray storage, hanging space, minimum 30 slots
24	Refrigerator	1	Dorm-style, adjustable shelves
25	Microwave oven	1	1,000-1,500 watts, automatic sensors, turntable, multiple power levels, minimum 1.5 cu. ft. interior

Item Number	Item Name	Classroom Count	Specification/Description
26	<b>Toaster oven</b>	1	Tabletop; large enough to bake cookies, muffins, pizza, & other small food items
27	<b>Kitchen tools</b>		
	Measuring equipment set	2 sets	Liquid & dry measuring cups & spoons
	Mixing equipment set	1set	Variety of spoons, whisks, spatulas, etc.
	Timer	1	60-minute, prolonged signal
	Spatulas & turner	6	Variety of sizes to fit pans
	Cutlery set	1	Stain- and rust-resistant; to include chef, boning, bread, paring, carving, etc.
	Mixing bowl set	1	Graduated sizes, heat-resistant, clear
28	<b>Oven baking equipment</b>		*Note* all baking items should fit dimensions & specifications of toaster oven purchased
	Baking sheet	3	
	Cake pan	3	
	Loaf pan	3	
	Muffin pan	3	
	Pizza pan	3	12" nonstick
	Pie pan	3	
	Casserole dish	3	
	Cooling rack	3	Metal
	Microwave set	1	Variety of pans for microwave cooking, various shapes & sizes
29	<b>Range-top cooking equipment</b>		
	Saucepan	4	Heavy w/lids, variety of sizes to fit range top
	Skillet	4	Heavy w/lids, variety of sizes to fit range top
30	<b>Small electrical equipment</b>		
	Blender	1	12 speed, open at both ends
	Can opener	1	Opens odd-shaped & dented cans
	Hand mixer	1	Stainless steel blades
	Toasters	1	4 slice, automatic
	Waffle maker	1	Nonstick, automatic temperature control, removable variety of plates for sandwiches, grilling, pancakes, or waffles
31	<b>Kitchen linen set</b>		
	Aprons	20	Wash-&-wear, varying sizes
	Dishcloths	5	Washable, large
	Kitchen towels	10	Washable, lint-free
	Hot pad	10	Varying sizes
	Potholder	10	Washable, heavy-duty, large
32	<b>Table appointments</b>		
	Dinnerware set	1	Service for 8, for demos – not individual student use
	Flatware set	1	Service for 8, for demos – not individual student use

## OFFICE OF TECHNICAL AND PROFESSIONAL EDUCATION

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**CAREER CLUSTERS: ARCHITECTURE AND CONSTRUCTION; GOVERNMENT AND PUBLIC ADMINISTRATION; HEALTH SCIENCE; LAW, PUBLIC SAFETY, AND SECURITY; MANUFACTURING; SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS; TRANSPORTATION, DISTRIBUTION, AND LOGISTICS**

### Program Description

Technical and professional education is a group of instructional programs that prepare individuals to apply technical knowledge and skills in one or more trade, technical, and/or professional occupations. Students will engage in activities and instruction enabling them to use, create, problem solve, and control various technology resources—people, tools, machines, information, materials, energy, capital, and time.

### Occupational Programs

There are seven career clusters from which students may choose. Specific courses are required for each of the programs of study (pathways); in addition, various options may be selected to complete the required curriculum.

### Student Organization

The appropriate career and technical student organization, SkillsUSA for all occupational programs and/or Technology Student Association (TSA) for all technology education programs, shall be an integral part of each instructional program respectively and shall follow the same guidelines, goals, objectives, and participate in activities of the Arkansas state chapter and the respective national organization.

## MEDICAL PROFESSIONS EDUCATION

### Cluster: Health Science

Planning, managing, and providing diagnostic, therapeutic, and information and environmental services in health care

#### Program Description

Medical professions education programs are designed to assist students in gaining the skills and knowledge needed to become contributing members of the health career community. The program is designed to provide completers with entry-level employment skills, initial mastery certification in a chosen health services career, and the opportunity to articulate with a postsecondary program leading to a higher level of mastery.

#### Occupational Programs

All start-up programs must follow the framework. Programs will be known as **medical professions education** programs.

#### Programs of Study

Medical professions education includes common core courses that are basic to all medical professions. Specialization experiences are designated to meet career objectives of students enrolled. Specific career focus programs of study are determined by these objectives. Examples of programs of study that may be offered include:

##### Therapeutic Services Pathway:

###### Programs of study:

- Dental assisting
- Medical assisting
- Nursing assistant/geriatric aide
- Physical therapy aide
- Medical professions, other (physicians, dentists, nurses, therapists, etc.)

##### Health Informative Pathway:

###### Program of study:

- Medical records clerk

#### Student Organization

The appropriate career and technical student organization shall be either Health Occupation Students of America (HOSA) or SkillsUSA. These organizations shall be an integral part of medical professions instructional courses and shall follow the same guidelines, goals, objectives, and participate in activities of the Arkansas state chapter and the respective national organization.

## APPLIED SCIENCES

### Philosophy

Career and technical education instruction is designed to prepare specialized workers at the technician level in occupational fields that include the technology supportive to professional engineers, scientists, physicians, and managers. Usually technology implies an extensive concentration in a particular occupational field along with the associated mathematics (algebra, as a minimum) and science (usually physics). Consequently, many technical programs are usually offered in a two-year postsecondary education environment. However, to prepare students for a technological society and equip them with the academic skills and technical principles sufficient to allow them to succeed in advanced technical programs/classes, two courses are available at the secondary level. Principles of Technology is a well-established, two-year course while the new Physics in Context course is a one-year course.

### Course Description

Principles of Technology (PT) and Physics in Context (PIC) are instructional courses for secondary students interested in technical careers and other students wishing to further their understanding of the physical principles underlying modern technology. (The PIC course was derived from the PT course.) These courses provide instruction in mechanical, fluid, electrical, and thermal principles on which modern equipment operates and the mathematics associated with these principles. These courses may be taught to provide an alternative for increased course work in science and provide two units or one unit, respectively, of applied and laboratory science toward graduation.

### Course Type, Length, Curriculum, and Course Credit

PT and PIC are designed as hands-on, activity-based, applied-physics courses normally requiring two years and one year, respectively, to complete. Students will receive information and experiences from a balance of sources, such as class lectures, demonstrations, discussions, the text and workbook, audio-video/visual aids, math skills labs, hands-on physics applications labs, and review.

Since the new PIC course is designed as a one-year course, it has only 10 units instead of 14 and does not review the required math in “math labs” as found in the PT curriculum.

The PT or PIC teacher shall follow the Center for Occupational Research and Development (CORD) teacher manuals, which are used as the course content guide for these courses. Since the science frameworks published by ADE are not as specific as the CORD PT objectives, the end-of-course tests for PT are correlated to the objectives found in the CORD PT and PIC curriculum.

One physics (science) credit toward graduation requirements shall be given students who complete the two-year PT course (PT I and PT II). One elective vocational credit or one physical science credit shall be given students who complete only one year of the PT course. One physics (science) credit toward graduation requirements shall be given students who complete the one-year PIC course.

### Eligibility of Students

Students in the 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade shall have the option of choosing the PT course, but students shall have a sound understanding of mathematics, including Algebra I, prior to entering the PT and PIC courses.



## Student Organization

PT and PIC students are encouraged to join the SkillsUSA student organization.

Programs of study by career clusters:

### Architecture and Construction Cluster

Designing, planning, managing, building, and maintaining physical structures and the larger built environment, including roadways and bridges and industrial, commercial, and residential facilities and buildings

Construction Pathway  
Construction Technology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494460	Carpentry	1			X	X	X	X

Construction Pathway  
HVACR Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495100	HVACR I	1			X	X	X	X
495110	HVACR II	2				X	X	X

Design Pre-construction Pathway  
Drafting and Design Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	<b>Architecture</b>							
494700	Drafting & Design	1			X	X	X	X
494710	Architecture/CADD I	1			X	X	X	X
494730	Architecture/CADD II	1				X	X	X

Design Pre-construction Pathway  
Geospatial Technology

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494910	GIS & Remote Sensing (GIS/RS)	.5			X	X	X	X
494900	Intro to GIS	.5			X	X	X	X
494920	Spatial Projects & Community Exchange (SPACE)	1					X	X
494930	Spatial Technology & Remote Sensing (STARS)	1				X	X	X

## Government and Public Administration Cluster

Executing governmental functions to include governance; national security; foreign service; planning; revenue and taxation; regulation; and management and administration at the local, state, and federal levels

### National Security Pathway JROTC Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495760	Air Force JROTC I	1			X	X	X	X
495770	Air Force JROTC II	1				X	X	X
495780	Air Force JROTC III	1					X	X
495790	Army JROTC I	1			X	X	X	X
495800	Army JROTC II	1				X	X	X
495810	Army JROTC III	1					X	X
495820	Marine JROTC I	1			X	X	X	X
495830	Marine JROTC II	1				X	X	X
495840	Marine JROTC III	1					X	X
495850	Navy JROTC I	1			X	X	X	X
495860	Navy JROTC II	1				X	X	X
495870	Navy JROTC III	1					X	X

## Health Science Cluster

Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development

### Therapeutic Services Pathway Medical Professional Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495300	Human Anatomy & Physiology	1				X	X	X
495330	Medical Procedures	.5			X	X	X	X
495340	Introduction to Medical Professions	.5			X	X	X	X

## Law, Public Safety, Corrections and Security Cluster

Planning, managing, and providing judicial, legal, and protective services, including professional and technical support services in the fire protection and criminal justice systems

### Law Enforcement Services Pathway Criminal Justice Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494600	Law Enforcement II	1			X	X	X	X
494620	Intro to Criminal Justice	1			X	X	X	X
494630	Law Enforcement I	1			X	X	X	X

## Manufacturing Cluster

Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities, such as production planning and control, maintenance, and manufacturing/process engineering

### Production Pathway Furniture Manufacturing Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494850	Furniture Manufacturing I	1			X	X	X	X
494870	Furniture Manufacturing II	2				X	X	X

### Maintenance, Installation, and Repair Pathway Industrial Equipment Maintenance Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495150	Industrial Equipment Maintenance I	1			X	X	X	X
495170	Industrial Equipment Maintenance II	2				X	X	X

### Production Pathway Machine Tool Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495200	Machine Tool I	1			X	X	X	X
495220	Machine Tool II	2				X	X	X

### Maintenance, Installation, and Repair Pathway Major Appliance Technology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495250	Major Appliance Technology I	1			X	X	X	X
495270	Major Appliance Technology II	2				X	X	X

### Production Pathway Welding Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495550	Gas Metal Arc Welding	1			X	X	X	X
495570	Metal Fabrication	1			X	X	X	X
495580	Shielded Metal Arc Welding	1			X	X	X	X

## Science, Technology, Engineering, and Mathematics Cluster

Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering), including laboratory and testing services and research and development services

### Engineering and Technology Pathway Computer Engineering Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494400	Diagnostics	1			X	X	X	X
494410	Networking	1			X	X	X	X
494420	Operations	1			X	X	X	X

### Engineering and Technology Pathway Drafting and Design Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	<b>Engineering</b>							
494700	Drafting & Design	1			X	X	X	X
494740	Engineering/CADD I	1			X	X	X	X
494760	Engineering/CADD II	1				X	X	X

### Engineering and Technology Pathway Electronics Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494800	Electronics I	1			X	X	X	X
494820	Electronics II	2				X	X	X

### Engineering and Technology Pathway Pre-engineering Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495460	Digital Electronics	1			X	X	X	X
495480	Introduction to Engineering Design	1			X	X	X	X
495490	Principles of Engineering	1			X	X	X	X

## Transportation, Distribution, and Logistics Cluster

Planning, managing, and moving of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services, such as transportation infrastructure planning and management, logistic services, and mobile equipment and facility maintenance

### Facility and Mobile Equipment Maintenance Pathway Automotive Collision Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494300	Nonstructural Analysis/Damage Repair	1			X	X	X	X
494310	Painting & Refinishing	1			X	X	X	X
494320	Structural Analysis/Damage Repair	1				X	X	X

### Facility and Mobile Equipment Maintenance Pathway Automotive Service Technology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494190	Electrical Systems	1			X	X	X	X
494200	Engine Performance	1			X	X	X	X

### Facility and Mobile Equipment Maintenance Pathway Aviation Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494250	Aviation I	2			X	X	X	X
494260	Aviation II	2				X	X	X

### Facility and Mobile Equipment Maintenance Pathway Diesel Mechanics Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494650	Diesel Mechanics I	2			X	X	X	X
494660	Diesel Mechanics II	2				X	X	X

### Facility and Mobile Equipment Maintenance Pathway Power Equipment Technology Program of Study

Course Code	Core Requirements	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495400	Power Equipment Technology I	1			X	X	X	X
495420	Power Equipment Technology II	2				X	X	X

**TECHNICAL AND PROFESSIONAL:**

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	<b>Architecture &amp; Construction</b>							
	Construction Technology:							
494450	Bricklaying	1			X	X	X	X
494460	Carpentry	1			X	X	X	X
494470	Concrete Masonry	1			X	X	X	X
494480	Construction Fundamentals	1			X	X	X	X
494490	Drywall	1			X	X	X	X
494500	Electrical	1			X	X	X	X
494510	Plumbing	1			X	X	X	X
	Drafting & Design:							
494700	Drafting & Design	1			X	X	X	X
494710	Architecture/CADD I	1			X	X	X	X
494720	Architecture/CADD Lab	1			X	X	X	X
494730	Architecture/CADD II	1				X	X	X
	Geospatial Technology:							
494910	GIS & Remote Sensing (GIS/RS)	.5			X	X	X	X
494900	Intro to GIS	.5			X	X	X	X
494920	Spatial Projects & Community Exchange (SPACE)	1					X	X
494930	Spatial Technology & Remote Sensing (STARS)	1				X	X	X
	Heating Ventilation, AC, & Refrigeration:							
495100	HVACR I	1			X	X	X	X
495110	HVACR II	2				X	X	X
	<b>Government &amp; Public Administration</b>							
	JROTC:							
495760	Air Force JROTC I	1			X	X	X	X
495770	Air Force JROTC II	1				X	X	X
495780	Air Force JROTC III	1					X	X
495880	Air Force JROTC IV	1						X
495790	Army JROTC I	1			X	X	X	X
495800	Army JROTC II	1				X	X	X
495810	Army JROTC III	1					X	X
495890	Army JROTC IV	1						X
495820	Marine JROTC I	1			X	X	X	X
495830	Marine JROTC II	1				X	X	X
495840	Marine JROTC III	1					X	X
495900	Marine JROTC IV	1						X
495850	Navy JROTC I	1			X	X	X	X
495860	Navy JROTC II	1				X	X	X
495870	Navy JROTC III	1					X	X
495910	Navy JROTC IV	1						X
	<b>Health Science</b>							
	Medical Professions Education:							
495370	Abnormal Psychology	.5			X	X	X	X
495300	Human Anatomy & Physiology	1				X	X	X
495320	Human Behavior & Disorders	.5			X	X	X	X
495340	Introduction to Medical Professions	.5			X	X	X	X
495380	Introduction to Medical Professions Extended	.5			X	X	X	X
495350	Medical Apprenticeship/Work-Based Learning	1					X	X
495310	Medical Clinical Internship/Specialization	1					X	X
495330	Medical Procedures	.5			X	X	X	X
495390	Medical Procedures Expanded	.5			X	X	X	X
495360	Medical Terminology	.5			X	X	X	X
	<b>Law, Public Safety, &amp; Security</b>							
	Criminal Justice:							
494600	Law Enforcement II	1			X	X	X	X
494610	Criminal Law	1			X	X	X	X
494620	Intro to Criminal Justice	1			X	X	X	X
494630	Law Enforcement I	1			X	X	X	X

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	<b>Manufacturing</b>							
	Furniture Manufacturing:							
494850	Furniture Manufacturing I	1			X	X	X	X
494860	Furniture Manufacturing Lab	1			X	X	X	X
494870	Furniture Manufacturing II	2				X	X	X
	Industrial Equipment Maintenance:							
495150	Industrial Equipment Maintenance I	1			X	X	X	X
495160	Industrial Equipment Maintenance Lab	1			X	X	X	X
495170	Industrial Equipment Maintenance II	2				X	X	X
	Machine Tool:							
495200	Machine Tool I	1			X	X	X	X
495210	Machine Tool Lab	1			X	X	X	X
495220	Machine Tool II	2				X	X	X
	Major Appliance Technology:							
495250	Major Appliance Technology I	1			X	X	X	X
495260	Major Appliance Technology Lab	1			X	X	X	X
495270	Major Appliance Technology II	2				X	X	X
	Welding:							
495550	Gas Metal Arc Welding	1			X	X	X	X
495560	Gas Tungsten Arc Welding	1			X	X	X	X
495570	Metal Fabrication	1			X	X	X	X
495580	Shielded Metal Arc Welding	1			X	X	X	X
	<b>Science, Technology, Engineering, &amp; Mathematics</b>							
	Computer Engineering:							
494400	Diagnostics	1			X	X	X	X
494410	Networking	1			X	X	X	X
494420	Operations	1			X	X	X	X
	Drafting & Design:							
494700	Drafting & Design	1			X	X	X	X
494740	Engineering/CADD I	1			X	X	X	X
494750	Engineering/CADD Lab	1			X	X	X	X
494760	Engineering/CADD II	1				X	X	X
	Electronics:							
494800	Electronics I	1			X	X	X	X
494810	Electronics Lab	1			X	X	X	X
494820	Electronics II	2				X	X	X
	Pre-engineering:							
495440	Civil Engineering & Architecture	1					X	X
495450	Computer-Integrated Manufacturing	1					X	X
495460	Digital Electronics	1			X	X	X	X
495470	Engineering Design & Development	1						X
495480	Introduction to Engineering Design	1			X	X	X	X
495490	Principles of Engineering	1			X	X	X	X
	<b>Transportation, Distribution, &amp; Logistics</b>							
	Automotive Collision:							
494300	Nonstructural Analysis/Repair	1			X	X	X	X
494310	Painting/Refinishing	1			X	X	X	X
494320	Structural Analysis/Repair	1				X	X	X
	Automotive Service Technology:							
494180	Brakes	1			X	X	X	X
494190	Electrical Systems	1			X	X	X	X
494200	Engine Performance	1			X	X	X	X
494210	Suspension & Steering	1			X	X	X	X
	Aviation:							
494250	Aviation I	2			X	X	X	X
494260	Aviation II	2				X	X	X
	Diesel Mechanics:							
494650	Diesel Mechanics I	2			X	X	X	X
494660	Diesel Mechanics II	2				X	X	X

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Power Equipment Technology:							
495400	Power Equipment Technology I	1			X	X	X	X
495420	Power Equipment Technology II	2				X	X	X
495410	Power Equipment Technology Lab	1			X	X	X	X

Course Code	Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Diesel Mechanics:							
494650	Diesel Mechanics I	2			X	X	X	X
494660	Diesel Mechanics II	2				X	X	X
	Power Equipment Technology:							
495400	Power Equipment Technology I	1			X	X	X	X
495420	Power Equipment Technology II	2				X	X	X
495410	Power Equipment Technology Lab	1			X	X	X	X

Course Code	Special Elective Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Seek DWE prior approval before implementation.							
399200	Career & Technical Education	.5	X	X				
590110	Career & Technical Education	.5			X	X	X	X
590020	CISCO Networking Academy	1			X	X	X	X
494140	First Responder	1			X	X	X	X
590030	FIRST Robotics	1			X	X	X	X
590090	Technical & Professional Course	1			X	X	X	X
590100	Technical & Professional Lab	1			X	X	X	X

Course Code	Nonprogram Specific Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
590010	Cashier Checker	.5			X	X	X	X
494010	Exploring Industrial Tech Ed I	.5			X			
494020	Exploring Industrial Tech Ed II	.5			X			
494030	Industrial Apprenticeship/Work-Based Learning I	1			X	X	X	X
494040	Industrial Apprenticeship/Work-Based Learning II	1				X	X	X
590040	Industrial Tech Ed	1			X	X	X	X

Course Code	Other Miscellaneous Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
690040	Driver Education	.5			X	X	X	X
495180	Dry Cleaning I	1			X	X	X	X
495190	Dry Cleaning II	2			X	X	X	X

Course Code	Middle School Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
399110	Automation & Robotics	.5	X	X				
399120	Design & Modeling	.5	X	X				
399130	The Magic of Electrons	.5	X	X				
399140	The Science of Technology	.5	X	X				
399150	EITE I	.5	X	X				
399160	EITE II	.5	X	X				



## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

PATHWAY: FACILITY AND MOBILE EQUIPMENT MAINTENANCE

PROGRAM OF STUDY: AUTOMOTIVE COLLISION

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air chisel set	2 sets	2 sets	2 sets	Assorted chisel types
Air compressor	2	2	2	5 hp, 2 stage, w/80 gal. tank each or a total of 160 gal. or greater capacity
Air drill	1	1	1	3/8" drive
Air file	2	4	5	Orbital or straight line
Air hammer	2	2	2	
Air nibbler	1	1	2	1/2 hp
Air ratchet	1	1	2	3/8" drive
Air regulators	10	10	10	Including water and/or oil extractors
Battery charger/boost starter	1	1	1	Heavy-duty
Body straightening equipment	1	1	1	Bench/rack or floor-mounted system w/multiple pull capability
Chisels & punches	2 sets	2 sets	2 sets	Assorted
Come-along	2	2	2	2-ton minimum
Computer system, teacher's	1	1	1	See Technology Standards
Computer printer	1	1	1	
Dolly set	3 sets	4 sets	5 sets	Assorted
Files	3 sets	4 sets	5 sets	Assorted
Grinder, bench	1	1	1	1 hp or larger
Grinder, body	3	4	5	7", air or electric
Jack stands, dolly	4 pair	4 pair	4 pair	2-ton minimum
Jack, body & fender	1	1	1	4-ton minimum, w/attachments
Jack, body & fender	1	1	1	10-ton minimum, w/attachments
Jack, floor	2	2	2	2-ton minimum
Masking machines	2	2	2	
Multimeter	2	2	2	Digital
Paint booth	1	1	1	OSHA-approved
Paint dryer, infrared	1	1	1	
Paint gun	2	2	2	Detail

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Paint gun	2	2	2	Color
Paint gun	2	2	2	Primer
Pliers set, vise grip	6 sets	8 sets	10 sets	
Polisher	1	2	3	Air or electric
Sandblaster	1	1	1	
Sander	6	8	10	Pneumatic, dual-action, 6", rotary, random orbital
Snips, sheet metal	1 set	2 sets	3 sets	Aviation & standard
Socket set	1	2	3	Impact, 1/2" drive, standard & metric
Socket set	1	2	3	1/2" drive, standard & metric
Socket set	1	2	3	1/4" drive, standard & metric
Tap & die set	1	1	1	Standard & metric
Torch, plasma cutting	1	1	1	
Tram & centerline datum gauges	1	1	1	
Welder, MIG	2	2	2	
Welder, Oxyacetylene	2	2	2	Welding, cutting, & brazing capability
Workbenches	3	4	5	Steel, 60" x 30"
Wrench set, combination	2 sets	2 sets	3 sets	5/16"-1 1/16", standard & metric
Wrench, air impact	2	2	3	1/2" drive

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: TRANSPORTATION, DISTRIBUTION, AND LOGISTICS  
 PATHWAY: FACILITY AND MOBILE EQUIPMENT MAINTENANCE  
 PROGRAM OF STUDY: AUTOMOTIVE SERVICE TECHNOLOGY

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specifica tion
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
<i>HAND TOOLS</i>				
Pliers set	3	4	5	Combination 6", needle nose 6", hose clamp, side cutters, locking jaw, slip joint (water pump)
Pry bar	3	4	5	Rolling head, straight
Punch set	3	4	5	Pin – 5/16", 1/4", 3/16", & 1/8"; taper – 5/8", 1/2", & 3/8"; center; brass drift
Screwdrivers set	3	4	5	Slotted: stubby – 6", 9", 12", offset Phillips: stubby – #1 & #2; 6" – #1 & #2; 12" -- #3; offset – #2 Posidrive: #1, #2, #3, #4 Impact driver set torx: T-8, T-10, T-15, T-20, T-25, T-27, T-30, T-40, T-50, T-55
Socket set	3	4	5	1/2" drive; 7/16"-1 1/8" U.S. standard & deep socket; 10 mm-25 mm standard & deep socket; extensions (3", 6", 12"); flex handle; ratchets
Socket set	3	4	5	1/4" drive; 1/4"-1/2" standard & deep socket; 6 mm-12 mm standard & deep socket; flex/univ. joint; ratchet; extensions (3", 6")

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specifica tion
Socket set	3	4	5	3/8" drive 5/16"-3/4" standard (6 pt.); 3/8"-3/4" deep socket (6 pt.); 9 mm-19 mm standard & deep socket; extensions (3", 6", 12", 18"); flexhead ratchet; universal joint, ratchet; speed handle; 5/8" & 13/16" spark plug sockets; 3/8"-3/4" flex socket set; 9 mm-19 mm flex socket set
Wrench set, combination	3	4	5	1/4"-1", 7 mm-19 mm
Wrench set, crowfoot	3	4	5	Standard & metric
Wrench set, flare nut	1	1	1	3/8"-3/4"(tubing), 10 mm-17 mm
Wrench set, ignition	3	4	5	Standard & metric
Wrench, impact	3	4	5	1/2" drive
Wrench, impact	3	4	5	3/8" drive
Wrench, torque	3	4	5	3/8" drive, 10-250 lb.in. 3/8" drive, 5-75 lb.ft. 1/2" drive, 50-250 lb.ft.
<b>GENERAL LABORATORY EQUIPMENT</b>				
Air chisel & bit set	3	4	5	Including adapters & various bits
Air compressor	1	1	1	5-10 hp, 100 gal.
Air delivery system	1	1	1	W/pressure regulator & piping system, minimum 2 air outlets per work area in lab
Air ratchet	3	4	5	3/8" drive
Caliper set, vernier	1	1	1	0"-6", 0 mm-125 mm
Charger, battery	1	1	1	40 amp, 12 v
Cleaning tank, parts	2	2	2	Nonsolvent based cleanser suggested
Compression tester	1	1	1	
Computer scan tool	1	1	1	Hand-held or PC w/interface capability for onboard diagnostics (OBD II trouble code compliant)
Computer system, teacher's	1	1	1	See Technology Standards

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specifica tion
Computer printer	1	1	1	See Technology Standards
Coolant/combustion gas detector	1	1	1	
Cooling system pressure tester	3	3	3	Including adapters
CV joint service tools	1	1	1	Including boot installation tool & boot clamping pliers or crimping ring
Cylinder leakage tester	1	1	1	
Dial indicator sets	3	4	5	Including flex arm & clamp base
Dispenser, gear lube	3	4	5	
Drill bit set	3	4	5	Twist drill, 1/64"-1/2", high speed
Drill, electric	3	4	5	1/2", variable speed, reversible
Drill, electric	3	4	5	3/8", variable speed, reversible
Grinder, bench or pedestal	1	1	1	6" diameter wheel
Hoist	2	2	2	Swing arm, frame contact
Jack, floor	3	4	5	Hydraulic, 2-ton
Meters, tach/ADWEII	3	4	5	Hand-held
Micrometer set	1	1	1	Outside type: 0-1", 1"-2", 2"-3", 3"-4", 4"-5"
Micrometer, depth	1	1	1	
Multimeter, digital	3	4	5	AC/DC, volts, ohms & amps, w/various lead sets
Pliers set, snap ring	3	4	5	Internal & external
Press, hydraulic	1	1	1	25-ton, w/adapters (piston pin press & adapters)
Puller set, master gear	1	1	1	Complete w/cabinet
Recovery system, engine coolant	1	1	1	Recycler or coolant disposal contract services
Socket set, impact	1	1	1	1/2" drive, 12 mm-32 mm
Socket sets, impact	1	1	1	1/2" drive, 7/16"-1 1/8"
Socket sets, impact	1	1	1	3/8" drive, standard & metric
Stands, jack	8 pair	8 pair	8 pair	5-ton, 4-leg, safety stands
Tap & die set	1	1	1	Standard & metric

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specifica tion
Thread repair insert kit	1	1	1	
Tubing bender	1	1	1	
Tubing cutter & flaring set	1	1	1	
V-blocks	1	1	1	
Vise, bench	10	10	10	Fitted to steel workbenches
Waste oil receptacle	1	1	1	Extension neck & funnel
Welder, portable	1	1	1	Oxyacetylene unit (complete welding outfit w/cutting torch attachments, bottles, & cylinder truck)
Workbench, steel	10	10	10	30" x 72", all worktables and workbenches are to be metal
Wrench, impact	1	1	1	1/2" & 3/8" drive
<b>SPECIALTY AREA EQUIPMENT</b>				
The "specialty area equipment" section covers the <u>additional</u> equipment an automotive laboratory should have for training in the specialty area. Some of the tools and equipment may be the same as for other specialty areas. Because the equipment is specialized, and to provide quality instruction, the equipment must be available in the laboratory. The quantity listed allows equipment to be used in more than one specialty area.				
Ball joint press & other special tools	1	1	1	
Chassis lubricator system	1	1	1	
Compressor, spring/strut	1	1	1	
Dial indicator set	1	1	1	
Socket wrench, drag link	3	4	5	
Tire mounting machine	1	1	1	Rim clamp suggested
Wheel alignment equipment	1	1	1	4-wheel w/rack, including alignment tools
Wheel balancer	1	1	1	Off car type
<b>BRAKES</b>				
Asbestos contamination removal system	1	1	1	OSHA-approved
Bleeder, brake	2	2	2	Pressure
Lathe, brake	1	1	1	Mobile or stationary, including disk & drum service attachments
Micrometer, brake disk	3	4	5	

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specifica tion
Micrometer, brake drum	3	4	5	Including calibration equipment
<i>ENGINE PERFORMANCE</i>				
Analyzer, engine	1	1	1	Including scope (lab scope w/ignition display capability acceptable)
Analyzer, exhaust gas	1	1	1	4 or 5 gas
Carburetor tools, computer	1	1	1	
Cleaner, fuel injection	1	1	1	
Gauge set, carburetor plug & angle	1	1	1	
Gauge set, fuel injection pressure	1	1	1	W/adapters
Light, timing advance	3	4	5	
Probe, logic	3	4	5	
Pyrometer	1	1	1	
Scope, lab	1	1	1	Dual trace
System tester, battery/starter/charging	2	2	2	
Tester, cylinder leakage	1	1	1	
Tester, injector pulse	1	1	1	
<i>ELECTRICAL/ELECTRONIC SYSTEMS</i>				
Pick tool set, connector	1	1	1	
Service tool, alternator	1	1	1	
System tester, battery/starter/charging	3	4	5	

**TECHNICAL AND PROFESSIONAL EDUCATION**

CLUSTER: TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

PATHWAY: FACILITY AND MOBILE EQUIPMENT MAINTENANCE

PROGRAM OF STUDY: AVIATION

**MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Overhead projector with screen	1	1	1	
Vacuum/pressure pump	1	1	1	
Aerodynamics demonstrator	1	1	1	
Multimeter	5	7	10	Digital
Electrical circuit trainer	1	1	1	
Drawing table	1	2	3	
Parallel bar	1	2	3	
Airframe mockup	1	1	1	
Scale	1	1	1	Including adapters & weights
Computer system	4	5	6	See Technology Standards
Computer printer	4	5	6	
Tool set, aircraft machine	1	1	1	
Wrench set, aircraft box	1	2	3	Metric, 0° offset, 12 pt., 6 mm-24 mm
Wrench set, aircraft box	1	2	3	Inches, 15° offset, 12 pt., 1/4"-7/8"
Wrench set, aircraft box	1	2	3	Metric, 15° offset, 12 pt., 8 mm-20 mm
Drill bit set, aircraft	1	1	1	Aircraft length, 135° split pt., 1/8"-1/2"
Socket set, deep	1	1	1	Inches, 1/2" drive, 1/2"-15/16"
Socket set, shallow	1	2	3	Inches, 1/2" drive, 1/2"-15/16"
Socket set, shallow	1	2	3	Metric, 1/2" drive, 8 mm-20 mm
Mandrel set, tubing	1	2	3	
Tool set, flaring	1	1	1	
Pump, test	1	1	1	
Battery, aircraft	4	4	4	
Battery charging system	1	1	1	Aircraft
Tug, aircraft	1	1	1	Aircraft towing vehicle
Aircraft	1	1	1	Aircraft w/taxi capability



## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

PATHWAY: ENGINEERING AND TECHNOLOGY

PROGRAM OF STUDY: COMPUTER ENGINEERING

(Previously – Computer Systems Technology)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Cabinet, storage	2	2	2	Locking, 36" W x 24" D x 72" H
Cable tester	1	1	1	Network circuit tester, data & voice communications test capability
Camcorder tripod	1	1	1	2'-5' collapsing, w/extension legs
Computer file server	1	1	1	Refer to current Technical & Professional Education Technology Standards
Computer JAZ drive	1	1	1	1 GB capacity JAZ disks
Computer modem	1	1	1	Refer to current Technical & Professional Education Technology Standards
Computer network hub	1	1	1	24 ports
Computer network hub	1	1	1	12 ports
Computer printer	1	2	2	
Computer printer	2	2	2	
Computer repair trainer	6	8	12	Microcomputer/PC trainer, compliant w/A+ certification standards
Computer scanner	1	1	1	
Computer system	6	6	6	See Technology Standards
Computer system, teacher's	1	1	1	See Technology Standards
Computer, laptop	1	1	1	See Technology Standards
Ladder	2	2	2	Stepladder, 10', fiberglass, nonconductive, Type 1A, 300-lb. workload
Ladder	2	2	2	Stepladder, 6', fiberglass, nonconductive, Type 1A, 300-lb workload

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Network diagnostic software	1	1	1	Capable of monitoring, analyzing, & diagnosing of network problems, Windows 95/98/2000 compliant
Network management software	1	1	1	For networking & managing classroom computer systems, Windows 95/98/2000 compliant
PC camera	2	2	2	Color, digital, 640 x 480 still picture resolution, 24 frames/sec at 160 x 120 resolution, including any required software
Tool kit, technician's	10	15	15	Comprehensive computer service hand tool kit
Tool kit, wiring	1	1	1	For coax cable, cable tester, center conductor trimmer, crimp frame, die sets, punch tools, stripper
Tool kit, wiring	1	1	1	For Category 5 cable, cable tester, crimp tool, round wire cutter/stripper
Uninterruptible power source (UPS)	1	1	1	Including software, Windows 95/98/2000 compliant, automatic voltage regulation, surge & noise suppression
Video camcorder	1	1	1	1/2" VHS, portable, w/battery pack & carrying case
Volt/ohm meter	2	4	6	Digital
Worktables	10	12	12	30" x 60", w/2 duplex outlets available

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: ARCHITECTURE AND CONSTRUCTION

PATHWAY: CONSTRUCTION

PROGRAM OF STUDY: CONSTRUCTION TECHNOLOGY

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	Portable, 2 hp, 30 gal., 110 v
Air compressor	1	1	1	Stationary, 5 hp, 220 v, 60 gal.
Airless paint sprayer	1	1	1	1 pt. or 1 qt. capacity, 110 v
Airless paint sprayer	1	1	1	5 gal. capacity, 110 v
Bench, work	6	7	8	36" x 48", 2 1/4" hardwood tops
Cart, hand	1	1	1	Brick
Computer system, teacher's	1	1	1	See Technology Standards
Computer printer	1	1	1	
Drill bit set	1	1	1	Wood, 1/4"-1"
Drill press	1	1	1	15", 1/2", 1/2 hp, 110 v, single-phase
Drill, cordless	1	2	3	Electric, 3/8", w/charger, pistol grip, heavy-duty, 2-speed, forward & reverse
Eyewash station	1	1	1	
Grinder, bench	1	1	1	6", 1/3 hp, 110 v, single-phase, 2-wheel
Ladder, extension	1	1	1	12'/24', aluminum
Ladder, step	1	1	1	10', heavy-duty, aluminum
Ladder, step	2	2	2	6', heavy-duty, fiberglass
Mortar box	1	1	1	15 cubic ft.
Nail gun, pneumatic	1	1	1	Box/common
Nail gun, pneumatic	1	2	3	Finish
Pop-rivet gun	1	1	1	Pneumatic
Router	1	2	3	1 1/2 hp, 22,000 rpm, 110 v
Router guide	1	1	1	For cabinet doors
Router, plastic laminates	1	1	1	Trimmer
Sander, belt	1	2	3	3" x 21", 110 v
Sander, belt/disk	1	1	1	Bench or pedestal type, 6" x 48" belt, 110 v
Sander, vibrating	2	4	6	Heavy-duty, 110 v

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Saw, band	1	1	1	15", 3/4 hp, 110/220 v, single-phase
Saw, circular	2	2	2	7 1/4"
Saw, compound miter	1	1	2	1 1/2 hp, 5,000 rpm, 110 v
Saw, masonry	1	1	1	110/220 v, single-phase
Saw, panel or equivalent	1	1	1	Panel saw or equivalent guide table for table saw
Saw, saber	1	2	3	1" stroke, 110 v
Saw, scroll	1	1	1	15", 110 v
Saw, table	1	2	2	10" heavy-duty, tilt arbor, 3 hp, 110/220 v, single-phase
Saw, table	1	1	1	Contractor's, 10" tilt arbor, 1 1/2 hp, 110/220 v, single-phase
Scaffolding section	1 sec	1 sec	1 sec	8' height, low level, steel mason's
Scaffolding section	2 sec	2 sec	2 sec	Steel or aluminum, collapsing
Screwdriver, cordless	2	4	6	W/charger
Screw gun	2	2	2	Drywall type
Stapler, pneumatic	1	2	2	1 1/4"-1 1/2"
Stapler, pneumatic	1	2	2	1/4"-5/8"
Transit & tripod	1	1	1	Builder's
Transit & tripod	1	1	1	Laser
Vacuum cleaner, shop	1	2	3	5 gal., 110 v, wet/dry

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: LAW, PUBLIC SAFETY, AND SECURITY

PATHWAY: LAW ENFORCEMENT SERVICE

PROGRAM OF STUDY: CRIMINAL JUSTICE

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Belt, patrolman's	4	6	8	Nylon; including patrolman's flashlight, handcuffs, & red non-fiction plastic gun & carrier for each; carrier for walkie-talkie
Cabinet, storage	2	2	2	Locking, 36" W x 24" D x 72" H
Camcorder, digital	2	2	2	Still photo capability, digital zoom, time/date generator, (standard accessories – battery holder, battery, tripod base, microphone, viewfinder, carrying case)
Camcorder tripod	1	2	2	2'-5' collapsing, w/extension legs
Camera	1	1	1	35 mm, f2.5 lens, built-in flash
Camera lens kit	1	1	1	Lens kit for digital camera, wide-angle & close-up lens attachments
Camera telephoto lens	1	1	1	For 35 mm camera
Camera, digital	1	2	3	Resolution 3.0+ megapixels, computer interface or dock, 6x zoom, 8 Mb internal memory, rechargeable battery & charger
Casting kit	1	2	2	
Computer printer, ink-jet	4	6	8	
Computer printer, laser	1	1	1	
Computer scanner	1	1	1	
Computer system	4	6	8	See Technology Standards
Computer system, teacher's	1	1	1	See Technology Standards
Computer, notebook	1	1	1	See Technology Standards
Drafting parallel bar	2	2	2	36"
Drafting table	2	2	2	Drawing surface 24" x 36" minimum
Fingerprint kit	1	1	1	Master
Metal detector	1	1	1	Hand-held
Microscope	2	2	2	Magnification 100x-300x, fluorescent lighting
Microscope	1	1	1	Computer interface, magnification 100x-300x,

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Microscope, stereoscopic	2	3	4	Magnification 40x total, fluorescent lighting
Patrol car	1	1	1	Retired police cruiser
Photo editing software	4	6	8	Photoshop, Photo Editor, or equal; digital imaging & editing
Radio training system	1	1	1	To mimic police dispatch console, microphone, recorder, etc.
Telephone trainer	1	1	1	Including tape recorder
Video camcorder	1	1	1	1/2" VHS, portable w/battery pack & carrying case
Video monitor or television	1	1	1	36" color, large screen
Walkie-talkie	4	6	8	Police, channel selector, w/shoulder microphone

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

PATHWAY: ENGINEERING AND TECHNOLOGY

PROGRAM OF STUDY: DRAFTING AND DESIGN

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Blueprint storage cabinet	1	1	1	24" x 36" capacity
Computer	15	20	25	See Technology Standards
Computer plotter	1	1	1	Contact State Office for Standards
Computer pointing device teacher's	1	1	1	
Computer pointing device	15	20	25	
Computer printer	2	2	3	
Computer scanner	1	1	2	
Computer, teacher's	1	1	1	See Technology Standards
Drafting chair	15	20	25	Adjustable height & back
Instructor's drawing table	1	1	1	30" x 42" drawing surface, adjustable height & tilt, vinyl board cover, 24" x 60" office desk
Instructor's drawing chair	1	1	1	Adjustable height & back
Machinist measuring instrument set	2	2	2	1" micrometer, 6" vernier gauge, combination square, 6" machinist scale
Plot server	1	1	1	Contact State Office for Standards
Computer workstation	15	20	25	Contact State Office for Standards
CAD software, student	15	20	25	Contact State Office for Standards
CAD software, teacher	1	1	1	Current release of AutoCAD, AutoCAD Mechanical, or Architectural Desktop
Architectural Graphic Standards Reference	1	1	1	

# TECHNICAL AND PROFESSIONAL EDUCATION

## EXPLORING INDUSTRIAL TECHNOLOGY EDUCATION

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
COMMUNICATIONS – COMPUTER-AIDED DESIGN				
CAD software	2	2	2	CAD software, AutoCAD 2000 LT
Computer system	2	2	2	See Technology Standards
Computer printer, ink-jet	1	1	1	
COMMUNICATIONS – VIDEO PRODUCTION				
Audio cassette player/recorder	1	1	1	Interfacing w/VCR player/recorder & video mixer listed
Audio compact disk player	1	1	1	Stereo
Headphone	2	2	2	Stereo
Microphone	2	2	2	Interfacing w/audio cassette player/recorder & video mixer listed
Tripod, camcorder	1	1	1	2'-5' collapsing, w/extension legs
VCR player/recorder	2	2	2	1/2" VHS, w/external connections for video camera & monitor
Video camcorder	1	1	1	1/2" VHS, portable w/battery pack & carrying case
Video editing processor	1	1	1	Interfacing w/VCR listed
Video monitor	2	2	2	19" color, cable-ready
COMMUNICATIONS – RADIO PRODUCTION				
Audio amplifier	1	1	1	Stereo
Audio cassette player/recorder	1	1	1	Stereo, dual cassette
Audio compact disk player	1	1	1	Stereo
Audio mixer	1	1	1	Stereo
Headphones	2	2	2	Stereo
Microphone	2	2	2	
Speaker system	2	2	2	Modular speaker systems w/bass & treble speakers



Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
<b>COMMUNICATIONS – DESKTOP PUBLISHING &amp; COMPUTER GRAPHICS</b>				
Computer system	2	2	2	See Technology Standards – Level I
Computer printer, ink-jet	1	1	1	
Computer scanner	1	1	1	
Copier	1	1	1	
Desktop publishing software	2	2	2	Adobe Pagemaker
<b>CONSTRUCTION – ARCHITECTURAL DESIGN</b>				
CAD software	2	2	2	AutoCAD 2000 LT
Computer system	2	2	2	See Technology Standards
Computer printer, ink-jet	1	1	1	
<b>CONSTRUCTION – MATERIALS TESTING &amp; ANALYSIS</b>				
Pressure/strength tester	1	1	1	Hydraulic, pneumatic, or mechanical destructive pressure test stand that can measure weight or pressure applied
<b>CONSTRUCTION – STRUCTURAL SYSTEMS</b>				
Pressure/strength tester	1	1	1	Hydraulic, pneumatic, or mechanical destructive pressure test stand that can measure weight or pressure applied
<b>CONSTRUCTION – SURVEYING</b>				
Survey rod & target	1	1	1	9'6" wood or metal, feet & 10ths divisions
Transit level	1	1	1	20x scope, w/carrying case
Transit tripod	1	1	1	Wide frame, extension leg, w/head to fit transit level above
<b>ENERGY, POWER, &amp; TRANSPORTATION – AUTOMOTIVE DESIGN</b>				
Band saw, jigsaw, or scroll saw	1	1	1	10" bench model
Belt/disk sander	1	1	1	1/2 hp, 1" x 42" belt, 8" disk
Drill	1	1	1	Electric, 1/4" drive, variable speed, reversing
Drill press	1	1	1	8" bench model
Racing gate	1	1	1	Start/finish gates for CO2 racer, w/firing pin & housing
Rotary modeling tool	2	2	2	W/various bits for modeling w/wood
Spray booth	1	1	1	Tabletop, with or without exhaust
Vise	2	2	2	Tabletop, woodworker's vise or equivalent

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
<b>ENERGY, POWER, &amp; TRANSPORTATION – INTERNAL COMBUSTION ENGINE REPAIR</b>				
Buffer/grinder	1	1	1	6", 1/3 hp, dual wheel, wire brush, bench model
Drill	1	1	1	Electric, 1/4" drive, variable speed, reversing
Gasoline engine	6 (1 per period)	6 (1 per period)	6 (1 per period)	2.0+ hp, single cylinder, 4-stroke cycle, horizontal or vertical shaft
<b>ENERGY, POWER, &amp; TRANSPORTATION – FLIGHT SIMULATOR &amp; ROCKET DESIGN</b>				
Computer	2	2	2	Contact state office for standards
<b>ENERGY, POWER &amp; TRANSPORTATION – ELECTRONICS</b>				
Electronics trainer	1	1	1	Basic electronic systems desktop electronics trainer
<b>MANUFACTURING – ROBOTICS</b>				
Robotic work cell	1	1	1	Robotic work cell w/conveyors, optic sensors, programmer, microswitches, student workbooks
<b>MANUFACTURING – PNEUMATICS</b>				
Pneumatics trainer	1	1	1	Desktop pneumatics trainer
<b>MANUFACTURING – WELDING</b>				
Welding simulator	1	1	1	Desktop Welding Simulator
<b>MANUFACTURING – COMPUTER-AIDED MANUFACTURING</b>				
CAD software	1	1	1	AutoCAD 2000 LT
CAD/CAM software	1	1	1	Compatible w/CNC mill or lathe above
CNC mill or lathe	1	1	1	Vertical mill or lathe, bench top
Computer system	1	1	1	See Technology Standards
Computer printer, ink-jet	1	1	1	

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: MANUFACTURING  
PATHWAY: MAINTENANCE, INSTALLATION, AND REPAIR  
PROGRAM OF STUDY: ELECTRONICS

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Computer printer	1	1	1	
Computer system, teacher's	1	1	1	See Technology Standards
Function generator	10	12	15	2 MHz, TTL/CMOS pulse outputs
Lamp, magnifying	1	1	1	
Multimeter	10	12	15	Digital
Oscilloscope	10	12	15	20 MHz, dual trace
Tap & die set	1	1	1	Standard & metric
Tool set, alignment	1	1	1	Nonconductive
Tool set, electronics	1	1	1	Professional
Tool set, electronics	10	12	15	Technician's tool kit, student
Trainer, electronics	10	12	15	Including breadboard & components
Vacuum cleaner	1	1	1	Small, hand-held, w/attachments
Workbench	10	12	15	4-15 A outlets w/circuit breaker

# TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: MANUFACTURING  
PATHWAY: PRODUCTION  
PROGRAM OF STUDY: FURNITURE MANUFACTURING

## MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	Portable, 2 hp, 110 v, 30 gal.
Air compressor	1	1	1	Stationary, 5 hp, 60 gal., 220 v
Biscuit joiner	1	1	1	Hand-held or table model, 110 v
Computer system, teacher's	1	1	1	See Technology Standards
Computer printer	1	1	1	
Drill bit set	2	3	4	Wood, 1/4"-1"
Drill press	1	2	2	15", 1/2", 1/2 hp, 110 v, single-phase
Drill, electric	3	4	5	Cordless, 3/8", pistol grip, heavy-duty, 2-duty, 2-speed, forward & reverse, 110 v, w/charger
Eyewash station	1	1	1	
Guide, router	2	2	2	For cabinet doors
Jointer	1	1	1	8", 3/4 hp, 110/220 v, single-phase
Ladder, step	1	2	2	6', heavy-duty, fiberglass
Ladder, step	1	2	2	8', heavy-duty, aluminum
Nail gun, finish	2	3	4	Pneumatic
Spray gun, airless	2	2	2	1 pt. or 1 qt. capacity, 110 v
Router	2	3	4	1 1/2 hp, 22,000 rpm, 110 v, heavy-duty
Router, plastic laminate	2	2	2	110 v, trimmer
Sander, belt	1	1	2	3" x 21", electric, 110 v
Sander, belt/disk	1	1	2	Bench or pedestal, 6" x 48" belt, 8" disk, 110 v
Sander, vibrating	4	6	8	Heavy-duty, 110 v
Saw, band	1	1	1	15", 3/4 hp, 110/220 v, single-phase
Saw, compound miter	1	2	2	1 1/2 hp, 5,000 rpm, 110 v
Saw, panel or equivalent	1	1	1	Panel saw or equivalent guide table for table saw

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Saw, saber	2	2	2	1" stroke, 110 v
Saw, scroll	1	2	2	15", 110 v
Saw, table	2	2	2	10" heavy-duty, tilt arbor, 3 hp, 110/220 v, single-phase
Shaper w/bit set	1	1	1	110/220 v, single-phase
Stapler, pneumatic	2	3	4	1 1/4" staples
Stapler, pneumatic	2	3	4	1/4"-5/8" staples
Table, glue clamping	1	1	1	48" length
Workbench	6	10	12	36" x 48", 2 1/4" hardwood tops

# TECHNICAL AND PROFESSIONAL EDUCATION

## GATEWAY TO TECHNOLOGY

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15	Count 20	Count 25	Description/Specification {Indicates PLTW Description}
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
Breadboard trainer, electronic	13	13	13	{Briefcase Martek XK-700}
Camera, digital	1	1	1	Still pictures only {Sony, MVC-FD75} – or still pictures & movie clips {Sony, MVC-FD97}
Compressor, portable	1	1	1	{500027}
Computer system	26	26	26	See Technology Standards
Computer hub, ethernet	2	2	2	3 COM 16 port 10-BT, 16 connections
Computer printer	1	1	1	
Computer, laptop (teacher's)	1	1	1	See Technology Standards
Computer toner cartridge	1	1	1	
Extension unit with power supply	5	5	5	{Fishertechniks Extension (slave) unit w/power supply}
Gateway to Technology kit	7	7	7	{Fishertechniks} See detailed specs in PLTW purchasing manual
Gateway to Technology software bundle (1st Year)	1	1	1	{Inventor 5.3, Circuit Maker, Mastercam, Eshed Robotic Robocell}
Laser beam trainer	7	7	7	{Kelvin 840874}
Photo editing software	1	1	1	{Adobe Photoshop 6.0}
Projector, LCD	1	1	1	1,300 lumens, 800 x 600 SVGA, 1,080 x 720 XGA {Infocus LP 340} – or 800 lumens, 1,024 x 768 XGA, SXGA-compatible {LIGHTWARE LX*}
Racing platform track	1	1	1	{840957}
Racing 8-foot track	2	2	2	{840445}
Serial interface	5	5	5	{Fishertechniks serial interface w/power supply}
Stroboscope/tachometer	1	1	1	{Digital Carolina Biological Supply D75-1425}
Table	10	10	10	High-pressure laminate top, 30" x 60" {Virco 8774}
Table, folding	10	10	10	High-pressure laminate top, 30" x 96" {Virco 62308}
Wind turbine	1	1	1	{840955}
Workstation, computer	13	13	13	Computer (2 students), 30" x 60" {Virco 84265}

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

PATHWAY: ENGINEERING AND TECHNOLOGY

PROGRAM OF STUDY: GEOSPATIAL TECHNOLOGY

(Formerly – Geographic Information Systems)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
<b>EQUIPMENT/SOFTWARE FOR GEOGRAPHIC INFORMATION SYSTEMS (Year 1)</b>				
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
3-D software	1	1	1	
Arcview Schools & Lib Pkg (software)	1	1	1	
Computer page scanner	1	1	1	11" x 14" scan area, see current SpaceStars Equipment Standards
Computer printer	1	1	1	Color, networkable, legal/letter sheet, 128/256 Mb RAM, 1,200 DPI resolution (photo mode)
Computer server, switch, & network	1	1	1	Contact state office for SpaceStars Equipment Standards
Computer system, teacher's	1	1	1	GIS/RS workstation & monitor, contact state office for SpaceStars Equipment Standards
Computer system, student's	15	20	25	GIS/RS workstation & monitor, contact state office for SpaceStars Equipment Standards
GEODESY, GIS Data, Air Photo, Landsat 7, including satellite tool kit (software)	1	1	1	School license for GIS software & data
GPS units	5	7	10	Contact state office for SpaceStars Equipment Standards
Image analysis software	1	1	1	
Microsoft Office (software)	1	1	1	Classroom site license
Network analysis software	1	1	1	
Spatial analysis software	1	1	1	
LCD projector	1	1	1	Contact state office for SpaceStars Equipment Standards
<b>EQUIPMENT/SOFTWARE FOR GEOGRAPHIC INFORMATION SYSTEMS (Years 2 &amp; 3)</b>				
High-resolution multi-spectral data set (software)	1	1	1	For use in Year 2 Spatial technology & remote sensing
High-resolution multi-spectral data set (software)	1	1	1	For use in Year 2 Spatial projects & community exchange

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
ESSENTIAL TOOLS AND SUPPLIES (Essential tools and supplies are items such as hand tools, small power tools, test instruments, etc., considered necessary for instruction in the program but that cost less than \$100 or are not eligible for reimbursement by the grant.)				
Network installation	1	1	1	Installation & configuration of computer network, GIS software, etc.
SpaceStars station kit (Semester 1)	15	20	25	
Student kit (Year 2)	15	20	25	1 per student
Student kit (Year 3)	15	20	25	1 per student
Teacher resource pack (Year 2)	1	1	1	Curriculum/instructional materials
Teacher resource pack (Year 3)	1	1	1	Curriculum/instructional materials
Teacher resource pack (Semester 1)	1	1	1	Curriculum/instructional materials
Teacher resource pack (Semester 2)	1	1	1	Curriculum/instructional materials



## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: ARCHITECTURE AND CONSTRUCTION

PATHWAY: CONSTRUCTION

PROGRAM OF STUDY: HVACR

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air acetylene torch	2	2	2	
Air compressor	1	1	1	5 hp, 60 gal.
Amp & voltage recorder	2	2	2	Digital
Bench, work	2	2	2	Electrical, 4-15 A outlets w/circuit breaker
Bench, work	4	5	6	30" x 60", wood or metal
Charging cylinder	3	3	3	Heated
Charging meter	1	1	1	Electronic
Cooling unit	1	1	1	Window unit
Combustion testing kit	1	1	1	
Computer System	1	1	1	See Technology Standards
Computer Printer	1	1	1	
Cutter Set, Knock-Out	1	1	1	
Drill, Electric	2	3	4	3/8" drive, variable speed, reversing
Drill, Electric	2	3	4	Cordless, 3/8" Drive, variable speed, reversing
Drill, Electric	1	1	1	Right angle, 3/8" drive, variable speed, reversing
Gauge Set, Refrigeration	3	3	3	
Grinder, Bench	2	2	2	6", dual wheel
Hand Truck, Appliance	2	2	2	With tie strap
Heating/Cooling Unit	1	1	1	Furnace/condenser system
Heating/Cooling Unit	1	1	1	Heat pump system
Heating/Cooling Unit	1	1	1	Window unit
Hermetic Analyzer	2	2	2	
Hermetic Service Valve Kit	2	2	2	
Leak Detector	2	2	2	Electronic
Notcher	1	2	3	Hand
Pilot Tube	2	2	2	
Puller Set	1	2	3	Bearing

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Puller set	1	2	3	Gear
Regulator, nitrogen	1	1	1	W/nitrogen bottle & cart
Tap & die set	1	1	1	Standard & metric
Threading tool	3	3	3	T-handle tap wrench
Threading tool, die	2	2	2	
Threading tool, die stock	2	2	2	
Tubing bender	3	4	5	Lever
Tubing swage punch	2	2	2	
Vacuum gauge	2	2	2	Thermistor
Vacuum pump	2	2	2	2-stage, 20 micron
Welder, MIG	1	1	1	Portable, 90 amp, 115 v
Welder, portable	2	2	2	Oxyacetylene unit (complete welding outfit w/cutting torch attachments, bottles, & cylinder truck)
Wrench, impact	2	2	2	Electric

**TECHNICAL AND PROFESSIONAL EDUCATION****INDUSTRIAL COOPERATIVE TRAINING****MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

<b>Item Name</b>	<b>Count 15 Students</b>	<b>Count 20 Students</b>	<b>Count 25 Students</b>	<b>Description/Specification</b>
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Computer system	3	4	5	See Technology Standards
Computer printer	3	4	5	
Tape recorder, cassette	1	1	1	Stereo w/headphones
Television/VCR/DVD	1	1	1	25"

**TECHNICAL AND PROFESSIONAL EDUCATION**

CLUSTER: MANUFACTURING

PATHWAY: MAINTENANCE, INSTALLATION, AND REPAIR

PROGRAM OF STUDY: INDUSTRIAL EQUIPMENT MAINTENANCE

**MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

<b>Item Name</b>	<b>Count 15 Students</b>	<b>Count 20 Students</b>	<b>Count 25 Students</b>	<b>Description/Specification</b>
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	5 hp, w/80-gal. tank
Air regulators	2	2	2	Water and/or oil extractors
CAD software	1	2	3	AutoCAD LT or Inventor
Computer system, teacher's	1	2	3	See Technology Standards
Computer printer	1	2	3	
Dial indicator	1	1	1	
Drill press	1	2	3	Including attachments, 20" capacity
Drill, electric	2	3	4	3/8" reversible, variable speed
Drill, electric	2	3	4	1/2" reversible, variable speed
Exhaust system, smoke	1	1	1	
File set	1	2	3	Assorted
Grinder, bench	1	1	2	Dual wheel, 6"
Grinder, electric	1	2	3	Hand-held, 7"
Hydraulic system trainer	1	2	3	
Iron worker, hydraulic	1	1	1	50-ton, up to 1/2" x 10" cut
Jack, hydraulic	1	1	1	10-ton
Jack, hydraulic	2	2	2	5-ton
Lathe, bench	2	3	4	12" minimum length, w/attachments
Level, precision	1	1	1	
Mandrel set	1	2	3	Lathe
Milling machine, vertical	1	2	3	Including attachments
Multimeter	2	3	4	Digital
Welder, oxyacetylene	1	1	1	
Saw, band	1	1	1	Horizontal, metal, 7" capacity
Saw, band	1	1	1	Vertical, metal, 20" capacity
Saw, circular	1	1	1	7 1/4"
Saw, table	1	1	1	10", 1 1/2 hp
Square, machinist	1	2	3	Combination w/attachment set

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Surface plate	1	1	1	
Tables, work	5	6	7	Steel
Tap & die	1 set	1 set	1 set	Standard & metric, 1/2"-1 1/2"
Welder	2	2	2	AC/DC arc, 200 amp
Welder	1	1	1	MIG/TIG, 200 amp
Welder	1	1	1	MIG, portable, 90 amp, 115 v

# TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: MANUFACTURING  
 PATHWAY: PRODUCTION  
 PROGRAM OF STUDY: MACHINE TOOL TECHNOLOGY

## MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	115 v, 3 hp, 60-gal. tank
Air regulators	1	1	1	Water & oil separator
Arbor press	1	1	1	Hydraulic, 50-ton
CAD software	1	2	3	AutoCAD LT or Inventor
Collet sets	3	4	5	1/4"-1"
Computer system, teacher's	1	2	3	See Technology Standards
Computer printer	1	2	3	
Dial caliper	2	3	4	6"
Digital readout	2	3	4	For vertical milling machine
Drill press, bench	1	1	2	8", variable speed, 1/3 hp, w/attachments
Drill press, floor	1	1	2	20", variable speed, 1 1/2 hp, w/attachments
Drill, electric	1	2	3	1/2" drive, reversible, variable speed
Drill, electric	1	2	3	3/8" drive reversible, variable speed
End mill sets	3	3	3	1/4-1"
Gauge set, radius	1	1	1	
Gauge, height	1	1	1	
Grinder	1	1	1	Surface, 220 v, 1 hp, 6" x 18", magnetic chuck, automatic feed, w/attachments
Grinder, bench	1	1	1	7", 115 v, 1/2 hp
Grinder, carbide	1	1	1	115 v, 1/2 hp
Grinder, electric	1	2	3	7", hand-held
Grinder, pedestal/bench	1	1	1	10", 1 hp
Grinder, tool & cutter	1	1	1	1/2 hp
Grinder, tool post	1	1	1	115 v, 1/4 hp
Hardness tester	1	1	1	
Indexing head	1	1	1	For vertical milling machine
Lathe, bench	2	3	4	1 1/2 hp, 9" x 20" w/attachments
Lathe, gap bed	1	1	1	1 1/2 hp, 9" x 20" w/attachments

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Mandrels set	3	4	5	Lathe
Micrometer	2	3	4	1"-2"
Micrometer	2	3	4	2"-3"
Micrometer	1	2	3	3"-4"
Micrometer	1	2	3	Digital, 0-1", .0001" accuracy
Milling machine, vertical	1	2	3	8" x 30", variable speed 3 axis, 1 1/2 hp, w/attachments
Milling machine, vertical	1	1	1	9" x 42", variable speed, 3 axis, 3 hp power feed, w/attachments
Parallel set	2	3	4	For vertical milling machine
Reamer set	1	2	3	
Rotary table	1	1	1	For vertical milling machine
Sander	1	2	3	Belt & disk, 6" belt, 12" disk, 1 1/2 hp
Saw, band	1	1	1	Horizontal, 1/2 hp, 1" blade capacity, 3-speed, coolant system
Saw, band	1	1	1	Vertical, 2 hp, variable speed, w/blade welder
Surface plate	1	1	1	20" x 30", granite
Tap & die set	1	1	1	Standard 1/4"-1/2" & 3 mm-12 mm
Vise	2	2	2	Drill press, angle adjustable
Vise	6	7	8	Machinist, 4"
Workbench	6	7	8	Steel, 30" x 60"
Wrench set	1	2	3	Standard & metric, 5/16"-1 1/16"

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: MANUFACTURING  
PATHWAY: MAINTENANCE, INSTALLATION, AND REPAIR  
PROGRAM OF STUDY: MAJOR APPLIANCE REPAIR

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	2	2 hp, 30-gal. tank
Analyzer, hermetic	1	1	1	Multiphase
Cart, work	4	5	6	Roll around
Cleaning tank, parts	1	1	1	Nonsolvent-based cleanser suggested
Computer system, teacher's	1	1	1	See Technology Standards
Computer printer	1	1	1	
Drill press	1	1	2	Bench, 12"
Flipper, appliance	2	2	2	
Gauge & manifold, refrigeration	1	1	1	For HFC-134a
Gauge & manifold, refrigeration	1	1	1	For R-12
Gauge & manifold, refrigeration	1	1	1	For R-410
Grinder, bench	1	1	2	1/4 hp w/wire brush
Leak detector	2	2	2	Combustible gas, electronic
Leak detector	2	2	2	Halogen, electronic
Multimeter, digital	4	5	6	
Puller set	1	1	1	
Recovery cylinder	3	3	3	Refrigerant (1 ea. R-12, HFC-134a, R-410)
Recovery system, refrigerant	1	1	1	Multiple refrigerants
Table, metal	4	5	6	30" x 5'
Tap & die set	1	1	1	Standard & metric
Tool set, automatic washer	3	4	5	1 set per major manufacturer
Tool set, service valve	1	2	3	
Vacuum gauge	1	1	2	Vacuum to 50 microns
Vacuum pump	1	1	2	2-stage, 1/2 hp, 5 cu. ft./min.
Vise, bench	2	3	4	4" jaws
Vise, drill press	1	1	2	Angle adjustable



Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Vise, machinist	1	1	2	4 1/2" metal jaw
Welder, portable	1	1	1	Oxyacetylene unit (complete welding outfit w/cutting torch attachments, bottles, & cylinder truck)
Wrench set, open end	2	2	3	Standard & metric, 1/4"-1"; 7 mm-15 mm
Wrench set, socket	2	2	3	Standard & metric, 1/4" drive, 3/16"-1/2", 6 pt.; 5 mm-13 mm, standard & deep well
Wrench set, socket	2	2	3	Standard & metric, 3/8" drive, 3/8"-13/16", 5 mm-13 mm, standard & deep well
Wrench, air ratchet	1	2	3	3/8" drive

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: HEALTH SCIENCE  
 PATHWAY: THERAPEUTIC SERVICES  
 PATHWAY: HEALTH INFORMATICS  
 PROGRAM OF STUDY: MEDICAL PROFESSIONS EDUCATION

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
<b>AED automated ext. defibrillator</b>	1	1	1	Trainer w/voice & screen prompts/electrodes
<b>Anatomical chart</b>	1 set	1 set	1 set	Charts, markable, detailed illustration
<b>Anatomical model set</b>	1 set	1 set	1 set	
1 – Ear				Enlarged 3 times, dissectible in 6 parts, unbreakable plastic
1 – Eye				Enlarged 6 times, dissectible, unbreakable plastic
1 – Teeth				Teeth & jaw, 4-part series, cross-section, unbreakable plastic
1 – Skin				Enlarged 105 Times, cross-section, mounted
1 – Heart				Realistic, palpable, dissectible, unbreakable plastic
1 – Brain				Twice life size, mounted
<b>Anatomical torso</b>	1	1	1	Full sized, detachable parts, mounted, unbreakable plastic
<b>Beds, hospital</b>	2	2	2	Full spring, enameled steel, 6-button control, emergency crank, 80" x 35" mattress, spring-loaded adjustable side rails
<b>Basic examination &amp; surgical equipment</b>	1 set	2 sets	3 sets	
1 – Tuning fork				Stainless steel
1 – Laryngeal mirrors				Aluminum-magnesium alloy w/weights
2 – Percussion hammers				Triangle bomber red rubber, chrome-plated handle
1 – Nasal speculum				Stainless steel
<b>Blood pressure cuff</b>	5	10	15	Mercury, aluminum case, adult calibrated V-Lok inflation, 260 mm Hg scale
<b>Cabinet &amp; stand, TV/VCR</b>	1	1	1	On casters
<b>Cart, utility</b>	1	2	3	Welded steel, ball bearing casters, rubber wheels, T-shelves, 1 drawer
<b>Chart holders</b>	2	4	4	Spring-loaded or 3-ring binder
<b>Hospital linen set</b>	3 sets	6 sets	10 sets	
4 – Bedspreads				Cotton/polyester, 72" x 90"
4 – Draw sheets				45" x 72"
4 – Flat sheets				50/50 cotton/polyester, hospital grade
2 – Mattress pads				Quilted, cotton/poly fabric
2 – Mattress pads				Heavy-gauge vinyl

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
<b>3 bx exam gloves</b>				Latex-free
<b>1 set bath towels (1 dz)</b>				Cotton, 20" x 40"
<b>1 set washcloths (1 dz)</b>				Cotton, 12" x 12"
<b>Manikin, adult CPR</b>	2	2	2	Full body, face removable, disposable airway, electronic monitor, print out, carry case, cleaning kit
<b>Manikin, infant CPR</b>	2	2	2	Removable face, airway, brachial pulse simulator, movable jaw, indicator (monitor)
<b>Media storage center</b>	1	1	1	Components for films, VCR tapes, filmstrips
<b>Microscopes</b>	2	3	4	45 mm DIN objectives, 4x, 10x, 40" x 19", viewing tube mounted on rotating head, 20-watt illumination, oil immersion lens, low/high powered
<b>Ophthalmoscope</b>	1	1	1	Medium size handles, rechargeable batteries
<b>Otoscope</b>	1	1	1	Handle w/batteries, reusable specula
<b>Patient-assist equipment set</b>	1 set	2 sets	3 sets	
1 – Walker				1" aluminum tubing, folding, adjustable, nonskid, rubber tips
1 – Walking cane				Adjustable, 1" anodized aluminum, double locked, non-skid tip, cushioned handle
1 – Pair regular crutches				Laminated hardwood, adjustable, w/crutch hand
1 – Pair forearm crutches				Grip, underarm pads, nonskid rubber tips
10 – Isolation kits				Disposable
<b>Projector stand</b>	1	1	1	Multiheight
<b>Scales, adult weight</b>	1	2	2	Physician's balanced die cast beam, heavy-duty base & lower system
<b>Scales, pediatric weight</b>	1	2	2	Chrome-plated balance beam, enameled steel tray w/protective edges, 30-lb. capacity
<b>Skeleton, deluxe model</b>	1	1	1	Full sized, joints movable, heavy-duty plastic, dust cover
<b>Tables, multipurpose classroom</b>	5	6	7	Wood or metal (folding is OK), w/slide lock, 36" x 72"
<b>Vital signs instrument set</b>	1 set	2 sets	3 sets	
3 – Thermometer, electronic				Electronic, digital, visual & audio
10 – Thermometers, oral				Mercury/glass
10 – Stethoscope, student				Dual-head chest piece
10 – Blood pressure cuff				Calibrated V-Lok calibration & infiltration, cuff & bag
1 – Stethoscope, teaching				Dual-head chest piece, double set of binaural

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Wheelchair	1	2	2	Fixed arm rest, elevating leg rest, all steel, heavy-duty wheels

Classroom Equipment:

Item Name	Count	Description/Specification
Teacher desk & chair	1	
Student chairs	25	
Student desks	25	
File cabinet	1	
Television/VCR	1	
Overhead projector with screen	1	
A-V cart/media storage center	1	
Marker board/bulletin board	1	
Bookcases	2	
Computer table	4	
Computer chair	4	
Computer, desktop	4	See Technology Standards
Computer system, teacher's	2	See Technology Standards
Computer printer	2	

**TECHNICAL AND PROFESSIONAL EDUCATION**

CLUSTER: TRANSPORTATION, DISTRIBUTION, AND LOGISTICS  
 PATHWAY: FACILITY AND MOBILE EQUIPMENT MAINTENANCE  
 PROGRAM OF STUDY: POWER EQUIPMENT TECHNOLOGY

**MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE**

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	2 hp, 30-gal. tank
Computer system, teacher's	1	1	1	See Technology Standards – Level I
Computer printer	1	1	1	
Engine, Briggs & Stratton	2	2	2	3.5 hp, 4-cycle, current model
Engine, Briggs & Stratton	2	2	2	3.5 hp, quantum, current model
Engine, Kohler	2	2	2	3.5 hp, 4-cycle
Engine, Tecumseh	2	2	2	3.5 hp, 4-cycle
Engine, Tecumseh	2	2	2	3.5 hp, 2-cycle
Grinder	1	1	2	6", 2-wheel w/wire brush
Metal tables, work	4	6	8	30" x 6'
Micrometers	1 set	1 set	1 set	Assorted, 0-1" to 3"-4"
Parts cleaning sink	1	1	2	Chemical w/pump
Press, arbor	1	1	1	
Tachometer	1	1	2	Electronic
Tap & die set	1	1	1	Standard & metric
Test stand	5	5	5	Small engine
Valve seat repair set	3	3	3	One valve seat repair set for each major brand taught
Vise, bench	4	5	6	4 1/2" metal jaw
Welder, arc	1	1	1	200 amp
Welder, portable	1	1	1	Oxyacetylene unit (complete welding outfit w/cutting torch attachments, bottles, & cylinder truck)
Wrench, air ratchet	2	3	4	3/8" drive

# TECHNICAL AND PROFESSIONAL EDUCATION

## PRE-ENGINEERING TECHNOLOGY

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification {Indicates PLTW Description}
Television/VCR/DVD	1	1	1	25"
Overhead projector with screen	1	1	1	
A-V cart/media storage center	1	1	1	
<b>INTRODUCTION TO ENGINEERING DESIGN</b>				
Computer, laptop (teacher's)	1	1	1	Pentium 4, 4.2 GHz, Windows XP Pro, see detailed specs in PLTW purchasing manual (*compatible with Autodesk Inventor 8 & Windows XP Pro software)
Computer, student	15	20	25	Pentium 4, 4.2 GHz, Windows XP Pro, see detailed specs in PLTW purchasing manual (*compatible with Autodesk Inventor 8 & Windows XP Pro software)
Computer hub, ethernet	2	2	2	3 COM 16 port 10-BT, 16 connections
Computer printer	1	1	2	{HP LaserJet 5000N}
Computer printer	1	1	1	42" print width, 96 Mb memory, ethernet adapter, & 1EEE-1284 A-B cable {HP Design Jet 800}
Toner cartridge, printer	1	1	2	{For HP LaserJet 5000N printer}
Projector, LCD	1	1	1	1,100 lumens, 1,024 x 768 XGA, see detailed specs in PLTW purchasing manual {Infocus LP }
Workstation, computer	8	10	15	Computer (2 students), 30" x 60", w/adjustable height {Virco 8774}
Caliper, dial	15	20	25	6" {Starrett}
Table	8	10	15	High-pressure laminate top, 30" x 60", w/adjustable height {Virco 8774}
Table, folding	8	10	15	High-pressure laminate top, 30" x 96" {Virco 62308}
PLTW software bundle (1 <sup>st</sup> Year)	1	1	1	{Inventor 8, Circuit Maker}
<b>DIGITAL ELECTRONICS</b>				
Breadboard trainer, Electronic	13	13	13	{Briefcase Martek XK-700}

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification {Indicates PLTW Description}
Integrated circuit kit	2	2	2	See detailed specs in PLTW purchasing manual
Programmer	1	1	1	Windows-based {EMP-11 PLD}
Oscilloscope	1	1	1	20 MHz, dual trace {Kelvin KBL 740085}
<b>PRINCIPLES OF ENGINEERING</b>				
Pneumatic trainer	1	1	1	{Discovery I w/t CAI software Shortess-Rawson # D1000}
Hydraulic trainer	1	1	1	{Discovery II w/t CAI software Shortess-Rawson # D2000}
Mechanisms trainer	1	1	1	{Discovery III w/t CAI software Shortess-Rawson # D3000}
Principles of Engineering kit	4	4	5	See detailed specs in PLTW purchasing manual {Fischertechnik kit, PLTW-POE}
Structural stress analyzer	1	1	1	Complete w/safety enclosure, Windows-based software & OS
Adapter set, structural stress analyzer	1	1	1	Tensile tester & top-loading adapter for structural stress analyzer
Extension unit with power supply	5	5	8	{Fishertechniks Extension (slave) unit w/power supply}
Serial interface	5	5	8	{Fishertechniks serial interfaces w/power supply}
Miniprocessor	1	1	1	Portable {Digimatic DP-1HS}
<b>COMPUTER-INTEGRATED MANUFACTURING</b>				
Automated manufacturing package	1	1	1	Automated manufacturing package, see detailed specs in PLTW purchasing manual
Serial interface	5	5	8	{Fishertechniks serial interfaces w/power supply}
Slave unit with power supply	5	5	8	{Fishertechniks extension slave unit w/power supply}
Principles of Engineering kit	4	4	4	See detailed specs in PLTW purchasing manual {Fischertechnik kit, *PLTW-CIM}
Workbench	2	2	2	Multipurpose, 30" x 60", 3/4" maple top, heavy metal legs {PP63-2908}
Cabinet	1	1	1	9-drawer, roller base, 26" x 12" x 19" {PP19-1196}
CIM software bundle	1	1	1	Site license, 25 seats, (Eshed Robotic Robocell, CNC Motion, Edge CAM)

## TECHNICAL AND PROFESSIONAL EDUCATION

CLUSTER: ARCHITECTURE AND CONSTRUCTION

PATHWAY: CONSTRUCTION

PROGRAM OF STUDY: WELDING

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Description/Specification
Television/VCR/DVD	1	1	1	25"
Overhead projector w/screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Air compressor	1	1	1	5 hp, 80-gal. tank
Air compressor	2	2	2	Portable, 3 hp, 20-gal. tank
Air regulators	2	2	2	Including water and/or oil extractors
Band saw, horizontal	1	1	1	Metal, 7" capacity minimum, 1 hp
Band saw, vertical	1	1	1	Metal, 14" capacity minimum, 1 hp
Computer system, teacher's	1	1	1	See Technology Standards
Computer printer	1	1	1	
Cutting machine	1	1	1	Traveling, track type, oxyacetylene
Drill press	1	1	1	Including attachments, 15"
Drill, electric	1	2	3	1/2" drive, variable speed, reversible
Drill, electric	1	2	3	3/8" drive, variable speed, reversible
Exhaust system	1	1	1	Suitable for exhausting welding gases
Grinder	2	3	4	Bench or pedestal, 10", 1 hp
Grinder	1	1	1	Bench, 6", dual-wheel
Grinder	2	1	1	Electric, hand-held, 7"
Guide bend tester	1	1	1	
Hoist	1	1	1	1-ton, hand, chain or electric
Jack, floor	1	1	1	2-ton, hydraulic
Oven, electrode	1	1	1	
Puller set	1	1	1	Bearing, wheel, & gear
Quenching tank	1	1	1	
Saw, cut-off	1	1	1	Abrasive, 10", 1 hp
Shear	1	1	1	Squaring, 32", \$6,500
Tap & die set	1	1	1	Standard & metric to 1/2"
Welder, arc	10	12	12	300 amp, w/attachments
Welder, MIG	3	3	3	200 amp, w/attachments
Welder, portable	2	2	2	Oxyacetylene welding unit (complete w/cutting torch, bottles, attachments, & cylinder truck)
Welder, TIG	3	3	3	250 amp, w/attachments
Welding booths	10	12	12	For arc welding, 60" W x 96"H w/16" deep work surface



<b>Item Name</b>	<b>Count 15 Students</b>	<b>Count 20 Students</b>	<b>Count 25 Students</b>	<b>Description/Specification</b>
Welding stations, oxyacetylene	6	6	6	Including 2-stage regulators

# APPLIED SCIENCES

## PHYSICS IN CONTEXT

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count Per 4 Students	ECI Part #	Count Per Laboratory	Description/Specification /Cost Per Unit
Television/VCR/DVD			1	\$500
Computer printer, laser			1	
Computer system, teacher's			1	See Technology Standards
Breadboarding equipment	1	12500-1		\$375
Electrical mounted components	1	12500-2		\$226
Hardware & measuring package	1	12500-3		\$313
Mechanical mounted components	1	12500-4		\$420
Fluid accessories	1	12500-5		\$395
Thermal accessories	1	12500-6		\$280
Container & accessory package	1	12500-7		\$204
Special assemblies	1	12500-8		\$200
Waves & momentum	1	12500-9		\$459
Radiation & optics	1	12500-10		\$980
Laboratory items	1	12500-11		\$1,985
High current power supply	1	20600 E		\$595
Digital multimeter	1	50200 A		\$595
MOSFET multimeter	1	50500 B		\$595
Function generator	1	40600		\$595
Occilloscope, dual trace, 20 MHz	1	30920 E		\$595
Physics in Context laboratory manual		12501 A	1	\$35
Physics in Context laboratory student journal	4	12501 AJ		\$20
Instructor's guide		12503 A	1	\$35

## OFFICE OF CAREER GUIDANCE, EXPLORATION, AND PREPARATION

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### CAREER CLUSTER: ARTS, A/V TECHNOLOGY, AND COMMUNICATIONS (AAVTC)

Designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services

Students shall complete a minimum of three Carnegie units within one of the AAVTC career focus areas in order to receive completer status. However, certain electives may count toward the three required to achieve completer status. These common electives are JAG (1), Workforce Technology (1), or Workplace Readiness (.5).

Note: In some cases, a common elective may be completed several times, but it shall only be counted once for a maximum of one unit of credit toward completer status. In addition, only one of the common electives may be counted toward completer status. A combination of the common electives does not assist in achieving completer status above the designated one unit of credit.

#### Pathways within the Cluster

Specific pathways within the cluster are designed for high school students who have demonstrated a career interest in one of the areas. Each pathway focuses on preparing students for employment and continuing education in a particular field. The sequence of courses focuses on instruction particular to the duties and tasks performed by professionals in an area of audio-visual technology, film, printing technology, visual arts, performing arts, journalism, or broadcasting.

#### Business Industry Partnerships

Districts shall form partnerships with business/industry professionals representing the pathways offered within this cluster. Semi-annual meetings are required for the purpose of guiding and advising the teacher and administration on issues involving course content and resources for program improvement.

#### Student Organizations

Districts shall offer students access to leadership training through the SkillsUSA student organization.

Visual Arts Pathway  
Advertising Design Program of Study

Course Code	Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494150	Advertising Design I *	1			X	X	X	X
494170	Advertising Design II *	2				X	X	X
494160	Advertising Design Lab	1			X	X	X	X

Commercial Photography Program of Study

Course Code	Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
494350	Commercial Photography I *	1			X	X	X	X
494370	Commercial Photography II *	2				X	X	X
494360	Commercial Photography Lab	1			X	X	X	X
690020	Photojournalism	1				X	X	X

Printing Technology Pathway  
Graphic Communications Program of Study

Course Code	Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
495010	Electronic Imaging *	1			X	X	X	X
495020	Fundamentals of Graphic Communications *	1			X	X	X	X
495030	Finishing/Binding	1			X	X	X	X
495040	Image Assembly & Platemaking	1			X	X	X	X
495050	Offset Press Operation *	1			X	X	X	X
495060	Reproduction Photography	1			X	X	X	X

Broadcasting, Film, and Journalism Pathway  
Radio & TV Broadcasting Program of Study

Course Code	Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
	Radio Broadcasting							
495500	Radio/TV Broadcasting I *	1			X	X	X	X
495510	Radio/TV Broadcasting Lab	1			X	X	X	X
495520	Radio Broadcasting II *	2				X	X	X
495530	TV Broadcasting II *	2				X	X	X

\* Core Course within Program of Study

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

CLUSTER: ARTS, A-V TECHNOLOGY, AND COMMUNICATIONS

PATHWAY: VISUAL ARTS

PROGRAM OF STUDY: ADVERTISING DESIGN

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Television/VCR/DVD	1			25"
Overhead projector w/ screen	1			
A-V cart/media storage center	1			
LCD projector	1			
Air brush	5	7	9	
Air compressor	1	1	1	115 v, 1 hp, 30-gal tank
Computer	5	7	10	See Technology Standards
Computer printer	5	7	10	
Computer scanner	5	7	10	
Computer workstation	5	7	10	60" wide x 30" deep, desk height
Drying rack, silk screen	1	1	1	48" x 31", 48-slot, w/casters
Easel	5	7	10	Steel or wood
Enlarger, photographic	1	1	1	
Eraser, electric	1	3	5	
File, flat	1	1	1	46" x 35", stackable, 4-5 drawer
Label maker machine	1	1	1	Electronic, LCD display, typewriter keyboard, underlining, vertical/mirror printing, 1/2-1" clear tape
Mat cutter	1	1	1	
Press, dry mount	1	1	1	18" x 22"
Projector, slide	1	1	1	Carousel
Rotary trimmer	1	1	1	30" x 14"
Screen art kit	2	3	4	Paper, poster, or wood
Screen exposing unit	1	1	1	
Software	5	8	12	Specifically related to commercial art program area
Tables, drawing	15	20	25	24" x 36" drawing surface
Tables, tracing/light	3	5	7	18" x 24"

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

CLUSTER: ARTS, A-V TECHNOLOGY, AND COMMUNICATIONS

PATHWAY: VISUAL ARTS

PROGRAM OF STUDY: GRAPHIC COMMUNICATIONS

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Television/VCR/DVD	1	1	1	25"
Overhead projector w/screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
Binding machine	1	1	1	Plastic comb binder
Cabinet, storage	5	5	5	Steel, 18" x 36" x 78"
Camera, vertical	1	1	1	Complete w/quality halogen lamps, 16" x 20" copy board, light integrator, electronic timer; enlarges to 3X, reduces to 3X
Compressor, air	1	1	1	2 hp
Computer	4	6	8	See Technology Standards
Computer printer, laser	2	4	6	
Computer printer, color	2	2	2	
Computer scanner	2	2	2	
Copier	1	1	1	
Cutter, paper	1	1	1	24" hydraulic, to meet OSHA safety requirements
Door, dark room	1	1	1	Revolving, 200 sq ft minimum
Drill, punch	1	1	1	W/round cornering attachment
Folder, paper	1	1	1	Electronic feed control, tabletop model, 4" x 6" to 12" x 24" capacity, automatic feed
Jogger, paper	1	1	1	17" x 2"
Lights	2	2	2	Darkroom safe lights
Plate maker	1	1	1	Flip-top, 17" x 22"
Press, offset	2	3	4	11" x 17", two-color, chain delivery, independent control water & ink, variable speed, register bar, double sheet detector, vacuum feed
Press, padding	1	2	3	
Shelving, storage	3	3	3	6' L x 5' H x 15" D
Shelving, warehouse	2	2	2	Steel, 8' L x 7' H x 2' D
Sink, developing	1	1	1	W/3 20" x 24" developing trays
Software, publishing	4	4	4	
Stairs, safety	1	1	1	40" H x 24" W, handrails

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Stapler, floor model	1	1	1	Single head, 1/2" minimum capability, side or saddle w/round or flatware
Stapler, heavy-duty	1	1	1	25 sheets capacity
Stitcher	1	1	1	Automatic, double head
Table, layout	1	2	3	24" x 30"
Table, light	4	6	8	36" x 26"
Table, work	4	5	6	Plastic laminated top, 3' x 6'
Timer	2	2	2	7" dial
Tool set, basic	1	2	3	To include combination wrench set, screw driver set (standard & Phillips), socket set (1/4-3/8-1/2), assorted
Truck, hand	1	2	3	
Vacuum, shop	1	2	2	Wet or dry
Waxer	1	1	1	18"
Wrapping machine, shrink	1	1	1	

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

CLUSTER: ARTS, A-V TECHNOLOGY, AND COMMUNICATIONS

PATHWAY: BROADCAST, FILM, AND JOURNALISM

PROGRAM OF STUDY: RADIO/TELEVISION BROADCASTING

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Television/VCR/DVD	1	1	1	27"
Overhead projector w/screen	1	1	1	
A-V cart/media storage center	1	1	1	
LCD projector	1	1	1	
<b>PRODUCTION EDITING/CONTROL ROOM SYSTEM</b>				
Audio cassette player/recorder	1	1	1	Stereo, dual cassette, headphone jack
Audio disk player	1	1	1	Compact disk player, 5-disk capacity, digital-to-analog converter
Audio mixer	1	1	1	Minimum: 4 XLR inputs, 4 quarter-inch inputs, 2 quarter-inch audio outputs
Character generator	1	1	1	Capable of outline effect, superimpose over video, scroll titles, zoom titles
Editing controller, production	1	1	1	A/B roll editing w/2 sources, VITC/LTC time code editing, last edit recall, large jog/shuttle dial, split audio/video editing
Headphones	2	2	2	Stereo
Video edit/feed recorder	3	3	3	½" S-VHS, 4 audio channels (2 hi-fi, 1 linear), 33X dial picture search, built-in LTC time code reader/generator, jog/shuttle control, local & remote switch
Video mixer	1	1	1	A/V mixer, nonlinear; 4 S-Video or composite video inputs; 2-video source synchronization
Video monitor	2	2	2	Color, 13", audio horizontal resolution 330+ lines, dual loop through BNC video input, 4-pin Y/C input, built-in audio
Video monitor	1	1	1	Color, 14", 400+ lines resolution, 2 video inputs, 7-pin S-VHS input, under scan, pulse cross, blue check, color off, EIAJ 8-pin terminal, built-in audio
Workstation	1	1	1	Editing workstation
<b>STUDENT EDITING SYSTEM</b>				
Audio cassette player/recorder	1	2	3	Stereo, dual cassette, headphone jack



Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Audio disk player	1	2	3	Compact disk player, 5-disk capacity, digital-to-analog converter
Audio mixer	1	2	3	Minimum: 4 XLR inputs, 4 quarter-inch inputs, 2 quarter-inch audio outputs
Editing controller (student)	1	2	3	A/B roll editing with 2 sources, VITC/L & LTC time code editing, last edit recall, large jog/shuttle dial, split audio/video editing
Headphones	2	4	6	Stereo
Video edit/feed recorder	3	6	9	½" S-VHS, 4 audio channels (2 hi-fi, 1 linear), 33X dial picture search, built-in LTC time code reader/generator, jog/shuttle control, local & remote switch
Video monitor	3	6	9	Color, 13", audio horizontal resolution 330+ lines, dual loop through BNC video input, 4-pin Y/C input, built-in audio
Workstation	1	2	3	Editing workstation
<b>STUDIO CAMERA SYSTEM</b>				
Battery charger	1	1	1	Battery charger & camera power supply, 4-pin XLR cable
Battery charger	1	1	1	Battery charger, capacity for 4 NP, BP-Type 12 or 13.2 v NiCad batteries
Character generator	1	1	1	Capable of outline effect, superimpose over video, scroll titles, zoom titles
Communication system	1	1	2	Camera operator's headset, control room headset
Computer disk drive	1	1	1	JAZ, external or internal, 2 GB disk
Computer, desktop	1	1	1	See Technology Standards – Level I
Multi-event controller/switcher	1	1	1	100 controllable events, random day selection, control for 4 VCRs, internal video router w/stereo audio
Video camcorder	2	2	3	1/2" S-VHS, 1/3" CCD, servo zoom lens, 1.5" viewfinder, time/date generator, VITC/LTC generator, 12 v DC (Standard accessories – battery holder, battery, tripod base, microphone, viewfinder)

Item Name	Count 15 Students	Count 20 Students	Count 25 Students	Specification/Description
Video camcorder	1	1	1	Full studio size, 1/2" S-VHS, 3-CCD, servo zoom lens, 1.5" viewfinder, low-light performance, time/date generator, VITC/LTC generator, 12 v DC (Standard accessories – battery holder, battery, tripod base, microphone, viewfinder)
Video camera tripod	1	1	2	Full studio size, for use w/full size studio video camcorders, fluid head, deluxe dolly
Video camera tripod	3	3	4	For studio use w/video camcorders, fluid head, deluxe dolly
Video monitor	1	1	2	Studio monitor, color, 27", built-in audio, to monitor actual output
Video monitor	1	1	1	Studio monitor, color, 13", audio horizontal resolution 330+ lines, dual loop through BNC video input, 4-pin Y/C input, built-in audio
Video player/recorder	4	4	4	1/2"S-VHS, 4 audio channels, built-in LTC time code reader
<b>MICROPHONES</b>				
Microphone	2	3	4	Lavaliere, miniature, clip-on; 6' cable
Microphone	2	3	4	Omnidirectional, dynamic, hand-held
Microphone, wireless	2	3	4	Lavaliere, VHF microphone, wireless transmitter, & receiver
<b>LIGHTING</b>				
Light kit, field	1	1	1	3 spotlights (300 watts), 3 light poles (8'), carrying case
Lights	2	2	2	Key lights, 500 watts
Lights	2	2	2	Back lights, 500 watts
<b>COMPUTER</b>				
Computer, desktop	1	1	11	See Technology Standards
Computer scanner	1	1	1	
Computer printer	1	1	1	

## CAREER COMMUNICATIONS (Cluster Exploratory Pilot)

### Course Description

Schools may apply to start programs of study in the AAVTC career cluster beginning with the 2005 school year.

The career communications program is designed for students in grades 9-12 who have identified an interest in a career pathways classified within the AAVTC career cluster. The program of study is beneficial to students who expect to begin their careers immediately upon high school graduation as well as those who need to complete postsecondary training prior to starting a career.

The career communications program of study is flexible and can easily be designed to provide instruction in one or more of the AAVTC pathways. The program of study uniquely integrates existing academic and career and technical coursework to provide students with practical curriculum and specialized study that reflects their career interests.

School districts may submit requests to offer a program of study in career communications that has more than one pathway for completers. To receive DWE approval for career communications, a district must submit a detailed grant request using the standardized DWE application form.

The application must describe how requirements will be met and provide information regarding the credentials of the staff who will be teaching the course work. Minimum equipment and end-of-course testing requirements must be met. The program will be monitored on a regular basis.

### Foundation Courses

- Career Orientation
- Computer Technology or approved alternate
- Keyboarding

### Core Courses (for all career communications pathways):

- DWE-Approved Introduction to Career Communications (493720)
- DWE-Approved Career Communications I (493730) or ADE-approved course
- DWE-Approved Career Communications II (493740) or ADE-approved course

### Career Communications Pathways

Audio-Visual Technology & Film	Printing Technology	Visual Arts	Performing Arts	Journalism & Broadcasting
Credit: 2 units – Approved courses that fulfill the KSAs for this pathway	Credit: 2 units – Approved courses that fulfill the KSAs for this pathway	Credit: 2 units – Approved courses that fulfill the KSAs for this pathway	Credit: 2 units – Approved courses that fulfill the KSAs for this pathway (Pathway topics include dance, music, theater, & playwriting, or technical design & production)	Credit: 2 units – Approved courses that fulfill the KSAs for this pathway

## Instructional Course Work

### Course Type

1. Introduction to Career Communications (493720) is one semester in length.  
The course offers study in the broad aspects of careers within the AAVTC Career Cluster.
2. DWE-Approved Career Communications I is a yearlong course.  
The course focuses on basic knowledge and skills in a specific career pathway within the AAVTC Career Cluster. An ADE-approved course may be used for this component.
3. DWE-Approved Career Communications II is a yearlong course.  
The course focuses on building upon the knowledge and skills taught in Career Communications I. An ADE-approved course may be used for this component.
4. AAVTC Senior Seminar or Internship (optional)  
Credit: Between .5 unit and 4 units  
Grade level: 11-12  
This is a practical and supervised job experience designed to assist students with successful transition from school to work or to further education in a chosen career focus/major area. Capstones or internship experiences are individualized and competency-based. (For more detailed information, please refer to sections describing career cluster senior seminars [capstone] and internship.)

### Curriculum/Content Framework

Instruction in the introduction and internship or capstone courses follow specific pre-approved frameworks. Frameworks for DWE Career Communications I and DWE Career Communications II can be tailored to meet the needs of the local school but must be submitted and approved by DWE prior to implementation of the program.

### Student Organization

Although a specific student organization does not exist for career communications students, it is expected that they will participate in the student organization that best represents their area of study. In most cases, SkillsUSA can accommodate the students. The career communications program provides leadership instruction and training and may assist students in preparing for competitions and activities associated with their participation in a student organization.

### Courses Offered

Course Code	Special Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
493720	Introduction to Careers in AAVTC	.5			X	X	X	X
493730	Career Communications I	1			X	X	X	X
493740	Career Communications II	1				X	X	X

### Performing Arts Pathway (Example)

Course Code	Special Courses	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
493720	Introduction to Career in Arts, Audio-Video Technology, & Communications (AAVTC) *	.5			X	X	X	X
495920	Performing Arts I *	1			X	X	X	X
495930	Performing Arts II *	1			X	X	X	X
590120	Performing Arts Lab	2			X	X	X	X

Course Code	DWE Middle School Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
399210	Performing Arts Awareness	.5	X	X				
399220	Performing Arts Exploration	.5	X	X				

## **CAREER GUIDANCE, EXPLORATION, AND PREPARATION**

### **INTRODUCTION TO CAREER COMMUNICATIONS (Pilot)**

#### **MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE** (15 Students)

<b>Item Name</b>	<b>Count</b>	<b>Description/Specifications</b>
Computer	3	See Technology Standards – I
Network laser printer	1	
Digital camera	1	
Scanner	1	
LCD projector	1	
Teacher computer	1	
Video camera	1	
Lockable file cabinet	2	
Media cart	1	
27" television	1	
VCR/DVD	1	
Recording mic	1	

## CAREER GUIDANCE

### Why do career planning in your schools?

The Arkansas Department of Education Rules and Regulations Governing Public School Student Services states:

#### 8.0 Documentation of Services

- 8.01 Each building based school site in all school districts shall submit annual reports indicating services provided through the Student Services Plan to the Department of Education.
- 8.03 Each school counselor serving students in buildings housing students in grades 8-12 shall provide a career planning process for each student. During the five-year process documentation of the information provided must be maintained as to whether the information was discussed with the student in individual or group settings. Each counselor is to develop a form to document these activities which can be used district-wide. A copy of the form and a statement of how services were provided must be submitted to the Department of Education as part of the annual report required in 8.01.

The Federal Carl D. Perkins Vocational and Technical Education Act of 1998 (Public Law 105-332) says:

#### Sec. 134. Local Plan for Vocational and Technical Education Programs

“(a) Local Plan Required. – Any eligible recipient desiring financial assistance under this part shall, in accordance with requirements established by the eligible agency (in consultation with such other educational entities as the eligible agency determines to be appropriate) submit a local plan to the eligible agency. Such local plan shall cover the same period of time as the period of time applicable to the State plan submitted under section 122.

“(b) Contents. – The eligible agency shall determine requirement for local plans, except that each local plan shall –

“(1) describe how the vocational and technical education programs required under section 135(b) will be carried out with funds received under this title;

“(2) describe how the vocational and technical education activities will be carried out with respect to meeting State adjusted levels of performance established under section 113;

“(3) describe how the eligible recipient will –

“(A) improve the academic and technical skills of students participating in vocational and technical education programs by strengthening the academic, and vocational and technical components of such programs through the integration of academics with vocational and technical education programs through a coherent sequence of courses to ensure learning in the core academic, and vocational and technical subjects;

“(B) provide students with strong experience in and understanding of all aspects of an industry; and

“(C) ensure that students who participate in such vocational and technical education programs are taught to the same challenging academic proficiencies as are taught for all other students;

“(4) describe how parents, students, teachers, representatives of business and industry, labor organizations, representatives of special populations, and other interested individuals are involved in the development, implementation, and

evaluation of vocational and technical education programs assisted under this title, and how such individuals and entities are effectively informed about, and assisted in understanding, the requirements of this title;

“(5) provide assurances that the eligible recipient will provide a vocational and technical education program that is of such size, scope, and quality to bring about improvement in the quality of vocational and technical education programs;

“(6) describe the process that will be used to independently evaluate and continuously improve the performance of the eligible recipient;

“(7) describe how the eligible recipient –

“(A) will review vocational and technical education programs, and identify and adopt strategies to overcome barriers that result in lowering rates of access to or lowering success in the programs, for special populations; and

“(B) will provide programs that are designed to enable the special populations to meet the State adjusted levels of performance;

“(8) describe how individuals who are members of special populations will not be discriminated against on the basis of their status as members of the special populations;

“(9) describe how funds will be used to promote preparation for nontraditional training and employment; and

“(10) describe how comprehensive professional development (including initial teacher preparation) for vocational and technical, academic, guidance, and administrative personnel will be provided.

#### Sec. 135. Local Uses of Funds

“(a) General Authority. – Each eligible recipient that receives funds under this part shall use such funds to improve vocational and technical education programs.

“(b) Requirements for Uses of Funds. – Funds made available to eligible recipients under this part shall be used to support vocational and technical education programs that –

“(1) strengthen the academic, and vocational and technical skills of students participating in vocational and technical education programs by strengthening the academic, and vocational and technical components of such programs through the integration of academics with vocational and technical education programs through a coherent sequence of courses to ensure learning in the core academic, and vocational and technical subjects;

“(2) provide students with strong experience in and understanding of all aspects of an industry;

“(3) develop, improve, or expand the use of technology in vocational and technical education, which may include –

“(A) training of vocational and technical education personnel to use state-of-the-art technology, which may include distance learning;

“(B) providing vocational and technical education students with the academic, and vocational and technical skills that lead to entry into the high technology and telecommunications field; or

“(C) encouraging schools to work with high technology industries to offer voluntary internships and mentoring programs;



The Arkansas Department of Workforce Education “State Plan for Vocational and Technical Education” for 1999-2004 says:

**2.2.6 Preparing Students for Further Education or Entry into High Skill, High Wage Jobs in Current and Emerging Occupations. [Section 122(c)(1)(C)]**

Helping students understand the many career and educational opportunities that are available to them is the first step in helping them prepare for postsecondary education and their chosen career. The career guidance and counseling model being promoted by the Department of Workforce Education is Career Action Planning (CAP). The purpose of CAP is to help students and their parents explore educational and occupational possibilities and make appropriate career decisions based on a solid base of information. The CAP program involves teachers as advisors to work with all students and their parents in developing and maintaining individualized career plans and portfolios. CAP begins in grade eight with students beginning to build their career portfolio that includes scores on standardized tests, learning styles, career interests, as well as previous grades.

Each advisor is assigned a group of students for the year. The basic program elements are as follows: (1) Students meet monthly with their advisor. During these meetings, students learn about career opportunities and follow a comprehensive guidance curriculum which includes printed information and videos. (2) Advisors assist the students in developing a career portfolio and an individualized career plan. (3) Advisors meet with the students in grades 8-11 and their parents each spring to update the career portfolio, evaluate progress toward a planned program of study, and set short-term and long-term goals. (4) In grades 8 through 10, students participate in career assessment. As a result of the CAP program, parents of the students in grades 8 through 11 attend the annual conferences to help plan their sons’ and daughters’ career paths. For seniors, special “Senior Seminars” put them in touch with local employers and postsecondary opportunities. Students in schools that have implemented the CAP program are taking higher level courses, completing coherent programs of study with an academic or vocational focus, and remaining more focused on their post-high school goals.

Students enrolled in vocational and technical education programs will be prepared for post-high school opportunities by ensuring they are equipped with (1) a solid foundation of academic skills and the ability to apply those skills in advanced education, training, and employment; (2) workplace skills, including work ethic, employability skills, and higher-order thinking skills; and (3) technical competencies, including computer proficiencies.

## CAREER ORIENTATION

### Course Description

Career Orientation is a one- or two-semester course. It may be offered in the seventh or eighth grade (eighth grade recommended) for a minimum of one semester (two consecutive nine-week periods in either the first or second semester) and a maximum of two semesters.

### Course Type and Content

Career Orientation is an activity-based career exploration course designed to broaden students' knowledge about careers. The course will consist of instruction in the following areas: (1) self-awareness, (2) career awareness, including the 16 U.S.O.E. career clusters, (3) career planning, and (4) introduction to employability skills. Students shall receive occupational information from a balance of sources, such as audio-visual aids, computer software, resource speakers, field trips, job shadows, lectures, and applied activities. At the completion of the course, the student shall develop a tentative career action plan.

### Course Credit

One-half unit credit for a semester course and one unit credit for a two-semester course should be given Career Orientation students.

### Student Organization

A career and technical student organization for Career Orientation is optional.

### Course Offered

Course Code	Middle School Elective	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
399100	Career Orientation		X	X				

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

### CAREER ORIENTATION

#### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE (15 students)

Item Name	Count	Specification/Description
27" television	1	
VCR/DVD	1	
35 mm camera	1	
A-V cart/media storage center	1	
Computer	3	See Technology Standards
Digital video camera	1	
File cabinet	2	
Overhead projector w/screen	1	
Ink-jet printer	1	
Teacher computer	1	See Technology Standards

## INTERNSHIP

### Course Description

The internship course is designed to assist students in their specific career focus areas and to help them successfully transition from school to career. Students who expect to begin their careers immediately upon high school graduation as well as those who need to complete post-secondary training prior to starting a career can benefit from the course. The structure includes a strong business partnership that links the course and its participants to current resources, information, and guidance from industry professionals. It provides intense, competency-based classroom and work-site instruction specifically tailored to meet the needs of individual students. It also fosters articulation of programs between high schools and post-secondary education, credit-granting institutions, and apprenticeship programs. A post-graduation monitoring system is incorporated that identifies and addresses graduates' ongoing needs as they advance toward their identified career goals.

### Course Type

1. Internship is a course designed to serve 11<sup>th</sup>- and 12<sup>th</sup>-grade students who are in good academic standing and are enrolled in their third unit within a chosen career focus area. The entire course, which includes both classroom and work-site instruction, helps students successfully transition from school to work.

Interns receive guided classroom and guided work-site instruction that is competency-based and incorporates academics and applied learning activities. Each classroom and work-site competency an intern successfully completes is documented and placed in a portfolio. The intern receives the portfolio upon completion of the internship course.

#### Classroom Instruction

The classroom portion of the internship course focuses on teaching students the basic skills required by all employers. Interns are individually assessed, and weak areas are addressed while strong areas are reinforced.

Work-site instruction – Individual work sites must be approved by the internship coordinator. Written agreements shall be established between the school and the work site that outlines appropriate course delivery prior to student placement. Work-site instruction is guided by the employer and directly relates to the student's identified career focus. Compensation is negotiated for each intern and based on fair labor standards. Nonpaid internships are allowed but must be approved by program management staff.

2. Internship can be utilized in any program of study as a related option.

### Length of Course

1. Students shall complete between 180 hours and 720 hours of instruction.
2. Maximum length of enrollment in the internship course shall be two consecutive years.
3. Length of course shall be determined by the needs of the individual student. A specific plan shall be established for each intern that outlines the intern's planned experiences and expectations as they directly relate to his/her chosen career focus area.

## Eligibility of Students

1. Students must be at least 16 years of age in order to meet labor law requirements.
2. Students shall apply for acceptance to the internship course. Minimum guidelines for acceptance include:
  - a. An identified career focus on file;
  - b. Enrolled in third unit of an identified career major;
  - c. Academic standing of at least 2.0 on a 4.0 scale;
  - d. Acceptable attendance record as determined by the school administration;
  - e. Written recommendations from a counselor, a teacher in the student's career major area, a teacher outside the student's career major, and two personal references from nonrelatives;
  - f. Membership in a student organization that reflects intern's career goals and enhances his/her ability to excel in a chosen career focus area.

## Course Credits

1. Interns should be expected to complete at least 18 hours of coordinator contact hours and 180 hours of work-site study in order to receive one credit.
2. Interns should receive one credit for each additional 18 hours of coordinator contact and 180 hours of internship study completed up to a maximum of four credits for completing 72 hours of coordinator contact and 720 hours work-site study **within a consecutive two-year period.**

## Student Organization

Although a specific student organization does not exist for interns, the internship course is designed to support the guidelines, goals, and objectives of all student organizations. Interns are required to hold membership in the student organization that represents their individual career focus area, if one is available. The internship course provides leadership instruction and training and may assist students in preparing for competitions and activities associated with their particular student organization.

Course Code	Course	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493860	Internship	1					X	X

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

### INTERNSHIP

#### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE (15 students)

Item Name	Count	Specification/Description
27" television	1	
VCR/DVD	1	
A-V cart/media storage center	1	
Calculator	3	
Computer	8	See Technology Standards
Data station for computer	8	
Desk & chair for coordinator's office	1	
Digital video camera	1	
Docking station for laptop computer	1	
File cabinet	2	
Laptop computer	1	See Technology Standards
Laser printer	1	
LCD projector	1	
Scanner	1	
Telephone/fax/copier	1	

## KEYSTONE

### Course Description

Keystone courses are designed to help ninth- or tenth-grade students make smooth transitions from middle schools or junior highs to high schools. The course follows a framework that is customized by faculty members to meet the needs of individual project sites.

Although keystone courses originated as an orientation course for schools implementing academies, they may be adapted for use in regular high school settings.

Keystone has several purposes that include

- Decreasing the number of disciplinary referrals;
- Lowering drop-out rates;
- Raising test scores;
- Increasing student involvement in school activities, clubs, and community service;
- Increasing student enrollment in higher level academic coursework and/or skills attainment; and
- Promoting sound career development planning.

Minimum required activities are

- An orientation process that introduces students to the school's offerings, faculty, activities, clubs, rules, and regulations and
- Career exploration that builds on the students' Career Orientation experience and incorporates
  - Job shadowing or mentoring,
  - Career/college fair,
  - Guest speakers,
  - Supervised field trips to business and industry sites,
  - Parent/student educational/career development conferences, and
  - Continuation of four- to six-year academic/career planning process

The plan shall be submitted to DWE and address the following topics:

- Establish the mission/goals for the course,
- Establish the nonnegotiable components,
- Outline the orientation course,
- Outline the career exploration component,
- Define the workplace skills to be taught,
- Design how career planning will be incorporated,
- Establish the framework,
- Establish the time frame,
- Select and/or design appropriate bell-to-bell activities/curriculum for the first ¼ of course,
- Identify resources and support,
- Establish monthly meeting schedule,
- Establish schedule for career exploratory activities,
- Establish a division of responsibilities for further curriculum/activity development,
- Establish a follow-up method to record student data regarding improvement in areas of concern,

- Establish a goal and method of recruiting and training teachers for the keystone course, and
- Establish a date and method for evaluating course.

Classroom instruction shall follow the plan submitted to DWE by the school district.

#### Curriculum/Content Framework

Each keystone course shall establish a framework as part of the plan submitted to DWE.

#### Length of Course (based on plan submitted to DWE)

Minimum length – one semester (Schools on block schedules can modify the length of time to conform to the school's schedule; modification should be reflected in the plan submitted to DWE.)

#### Course Credits (based on a standard schedule)

Students shall receive .5 credit for completing a full-semester keystone course.

Course Code	Course	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
690010	Keystone	.5			X	X		

Course Code	DWE Middle School Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
399170	Keystone		X	X				



## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

### KEYSTONE

#### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

(15 Students)

This is a suggested equipment list. The count for equipment should be adapted to meet individual program needs. The career guidance, exploration, and preparation program manager must first approve any purchase variations.

Item Name	Count	Specification/Description
27" television	1	
VCR/DVD	1	
Digital video camera	1	
A-V cart/media storage center	1	
Computer (or portable computer lab)	3	See Technology Standards
File cabinet	1	
LCD projector	1	
Ink-jet printer	1	
Teacher computer (for data collection)	1	See Technology Standards

## SENIOR SEMINAR

### Course Description

Schools may apply to start DWE-approved career cluster senior seminar courses (capstone courses) to support any approved career and technical area of study. Areas that have traditionally been considered academic may also be served with a senior seminar course as long as the program of study is approved by DWE. This may include coursework such as journalism, law, art, drama, etc.

The senior seminar course is designed for seniors who are in the process of completing a program of study in any approved career and technical career area. The content is intended to facilitate the student's transition from school to work or higher education. The purpose is to strengthen skills in the areas of research, academics, SCANS skills, and oral presentation skills as they relate to the students' chosen area of study. It is also designed to enhance their ability to demonstrate learned skills. The course allows students to synthesize learned information through the use of career scenarios.

The course shall include

- SCANS skills study,
- A related career-based and contextual experience that reinforces SCANS skills and provides information to complete a senior project in the student's chosen career area,
- An integrative senior project and the development of a career/educational portfolio, and
- Locally preferred objectives as designed by the school. Locally preferred objectives may not supersede those aforementioned.

### Curriculum/Content Framework

A framework shall be approved prior to implementing the course. The framework shall follow DWE format and contain those items outlined in the course description. Locally preferred objectives may be added at the discretion of the district, but they may not replace or supersede those required of all senior seminar courses.

### Course Credits

DWE-approved career cluster senior seminar may be offered for one or two semesters with .5 unit of credit per semester.

### Student Organization

Although a specific student organization does not exist for senior seminar students, students shall participate in the student organization that best represents their area of study. The senior seminar course provides leadership instruction and training and may assist students in preparing for competitions and activities associated with their participation in a student organization.

Course Code	Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
Seek DWE prior approval before implementation.								
493890	Senior Seminar	.5						X

## WORKPLACE READINESS

### Course Description

Workplace Readiness is a one-semester course offered in grades 10-12. It focuses on problem solving, teamwork, communications skills, the use of technology, and self-management.

### Course Type

Workplace Readiness is a course that teaches the skills and attributes needed to succeed in the changing workplace through video, computer, and print lessons. The course is divided into five units: resources, interpersonal skills, information, systems, and technology.

### Eligibility of Student

Students in Workplace Readiness shall be in grades 10-12.

### Course Content

The course content shall reflect the Workplace Readiness framework approved by DWE.

### Course Credit

One-half unit credit for a semester course should be given Workplace Readiness students.

### Course Offered

Course Code	Course	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493880	Workplace Readiness	.5				X	X	X

## CAREER GUIDANCE, EXPLORATION, AND PREPARATION

### WORKPLACE READINESS

#### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE (15 students)

Item Name	Count	Description/Specification
27" television	1	
VCR/DVD	1	
A-V cart/media storage center	1	
Computer	3	See Technology Standards
File cabinet	1	
Laser printer	1	
LCD projector	1	
Teacher computer	1	See Technology Standards

## EAST/WORKFORCE TECHNOLOGY

### Course Description

EAST/Workforce Technology is a one-year, technology-based course designed as an alternative for the traditional Workplace Readiness course. It is intended for students in grades 10-12. The course creates a link with *East Lab* technology and methodology and focuses on teaching students the transferable skills they need to succeed in the changing workplace.

### Course Type

1. EAST/Workforce Technology employs a problem-based, service-learning environment that encourages students to use advanced technological applications, problem solving, teamwork, communication, and critical-thinking skills. Real-world advanced application in programming, computer design, and animation are used to reinforce math skills. Oral and written communication skills are reinforced through presentations, projects, and electronic communication. Work ethics and attitudes are strengthened as students take personal ownership of the lab and are responsible for software and equipment inventory, equipment maintenance, networking issues, and system administration.
2. EAST/Workforce Technology can be utilized in any program of study as a related option.

### Length of Course

EAST/Workforce Technology may be implemented as a one-year course.

### Eligibility of Students

Students in EAST/Workforce Technology shall meet *East* requirements. Students in EAST/Workforce Technology shall be completing career and technical programs of study. Students shall be in grades 9-12.

### Course Content

Course content shall meet *East* requirements.

### Course Credits

It is recommended that the equivalent of one unit of credit be given to EAST/Workforce Technology students.

### Facilities and Equipment

Facilities and equipment requirements must meet *East* standards. The Department of Workforce Education shall only be responsible for funding a designated portion of an *East Lab* facility. The amount of funding shall be based on a predetermined formula. The facilities and equipment requirements must be met within the specified time for course approval.

## Student Organization

Students enrolled in EAST/Workforce Technology are encouraged to hold membership in the student organization(s) that relate to their career focus area.

Course Code	Course	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
460010	EAST/Workforce Technology			X	X	X	X

## OFFICE OF SCHOOL IMPROVEMENT

### STATE STAFF

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### ARKANSAS YOUTH APPRENTICESHIP/WORK-BASED LEARNING (YA/WBL) PROGRAM

These operating guidelines are designed to provide consistency and ensure that all consortia are in compliance with the Arkansas Youth Apprenticeship/Work-Based Learning Act of 1991 **and** the rules and regulations associated with employer income tax credits for youth apprenticeship/work-based learning programs under Act 1168 of 1997.

### PROGRAM CRITERIA

#### Required Program Contents

Each YA/WBL program **shall**

- Have strong employer commitment and involvement;
- Enroll students at the end of the 10<sup>th</sup> grade into a three- to four-year YA/WBL program of study that begins in the 11<sup>th</sup> grade and ends with the attainment of a postsecondary associate degree, certificate, and/or completion of a traditional apprenticeship;
- Provide high-quality supervised learning opportunities for students at the work site;
- Integrate academic and vocational teaching and learning in the classroom and at work;
- Foster interactive, team-based learning in the classroom, using competency-based measures for evaluating student progress;
- Provide both academic and occupational credentials;
- Provide access and support to nontraditional groups; and
- Explicitly address issues presented by diversity in society and the workplace.

#### Approved Occupations and Industry Employers

The industries and occupations selected for this program must offer entry-level jobs with good opportunities for career advancement into high-skill, high-wage jobs. DWE, the State Apprenticeship Coordination Steering Committee, and local sites will take joint responsibility for identifying these industries and occupations. The State Apprenticeship Coordination Steering Committee will take responsibility for identifying traditional apprenticeship programs that are currently in place. **Approval of new apprentice program areas must be submitted 60 days prior to requested date.**

#### Career Focus Program of Study

A YA/WBL career focus program of study is a coherent sequence of **rigorous** academic and technical courses and a structured, work-based learning component that prepares students for successful completion of state academic standards and more advanced postsecondary education and work experiences related to their career cluster of interest. This program of study **must**

combine the 11<sup>th</sup> and 12<sup>th</sup> grades of high school and a postsecondary associate degree, certificate, and/or traditional apprenticeship. The career focus **must** be designed around one of the U.S. Department of Education's 16 career clusters, the KUDER assessments, and the Arkansas "Smart Core." **Entry into the YA/WBL program requires a Career Focus Program of Study signed by the student, parent, and instructor.**

U.S. Department of Education Career Clusters:

1. Agriculture, Food, and Natural Resources
2. Architecture and Construction
3. Arts, A-V Technology, and Communications
4. Business, Management, and Administrative Services
5. Education and Training
6. Financial Services
7. Government and Public Administration
8. Hospitality and Tourism
9. Health Science
10. Human Services
11. Information Technology
12. Law, Public Safety, and Security
13. Manufacturing
14. Marketing, Sales, and Services
15. Science, Technology, Engineering, and Mathematics
16. Transportation, Distribution, and Logistics

### **Structured Work-Based Learning Plan**

A structured plan for student learning is developed by the classroom instructor and workplace mentor. This plan outlines the **individual** student's learning in the workplace with progressively higher levels of work experience accompanied by training and mentoring along with wage progression; identifies work placements by the employer that engage the student in all aspects of the industry through job rotations and in structured learning opportunities that meet program/career learning objectives; and clarifies the legal rights, responsibilities, and liabilities of the partners. **This plan must be signed by the employer, instructor, and student before the student begins the apprentice position with the employer.**



## CONSORTIUM CRITERIA

### Consortium Categories

How a consortium is defined is determined by the service area.

Industry-based: A consortium whose industry partners will establish a program made available to high schools around the state

Postsecondary Institution-based: A consortium formed to provide the program to the students of the area feeder schools of the postsecondary institution partner

High School-based: A consortium established to offer a program only to the students of the local high school partner

### Consortium Membership

**Must** include

- One or more secondary schools offering vocational and technical education programs of study that incorporate integrated academic and vocational teaching; **AND**
- One or more industry employers providing entry-level jobs (paid employment) with **good opportunities** for career advancement into **high-skill, high-wage** jobs and integrating academic and vocational concepts into the job training; **AND**
- One or more postsecondary schools that offer associate degrees and/or certificates (four-year postsecondary schools not offering one of the required programs do not qualify for membership); **OR**
- One or more traditional (adult) apprenticeship programs.

NOTE: Schools may be members of more than one consortium.

## YOUTH APPRENTICE STUDENT CRITERIA

To be eligible to participate in a Youth Apprenticeship/Work-Based Learning (YA/WBL) program, a student must

- Be between 16-21 years of age;
- Enter the youth apprenticeship program before entering the 11<sup>th</sup> grade;
- Have a three- to five-year career plan that includes high school, postsecondary education, and training;
- Agree to a three- to five-year apprenticeship program;
- Experience work in a chosen occupational cluster, from a broad perspective down to a specific occupation; and
- In addition to a high school diploma, obtain certification in an occupation **and** a postsecondary certificate, diploma, or degree **and/or** a journeyman license.

A student participating in a YA/WBL may be classified in one of the following three categories:

Secondary: A high school student age 16-21 who is participating in an approved YA/WBL program. The student must have a program of study signed by the instructor, student, and parent **and** a Structured Work-based Learning Plan signed by the instructor, employer, and student on file.

Postsecondary: A student who has matriculated from the secondary program to a postsecondary school and/or traditional apprenticeship program, which is an extension of the student's approved secondary YA/WBL program, and has received articulated postsecondary course credit

Completer: A student who has completed an associate degree, certificate, and/or traditional apprenticeship

## REQUIRED REPORTS

Time Distribution Documentation: Time distribution records or statements are required for each YA/WBL employee paid with funds from more than one source. Documentation should be recorded, signed by the employee, and placed in the local consortium YA/WBL files monthly.

Quarterly Accountability Report: A narrative report describing significant consortium activities, accomplishments, etc., is required each October 20, January 20, and April 20.

Annual Accountability Report: Accountability reports justify consortium expenditures and budget requests. **An oral presentation of the accountability reports will be made by the consortium to state staff.** Accountability reports are due each June 1.

Annual Expenditure Report: A report of expenditures by budget category is due July 31. (Contact DWE if a later date is needed.)

Annual Application: A new request for consortium funding is required annually. The end-of-year accountability report will be used in budget approval, and approval is based on student enrollment, retention, and progress data.

## MONITORING/ACCOUNTABILITY

### Monitoring

State staff will make on-site consortium reviews that will include

- Documents examination and student, instructor, employer, and parent interviews for random samples of student Social Security numbers;
- Review of the VTECS accountability system;
- Work-site visits to review student work plans integrating academic and vocational teaching/learning;
- Validation of documentation for employer tax credits under Act 1168 of 1997; and
- Arkansas YA/WBL Act of 1991 required program contents.

## ACCOUNTABILITY

**Each consortium is required to use the VTECS CONNECT, which is supplied free of charge by DWE, for its accountability system.**

### Required Accountability System Contents

- Student SSN
- Apprentice occupational area
- KUDER assessment data
- Career focus program of study
- Structured plan for student learning

- Academic courses completed
- Career & technical courses completed
- Articulated/concurrent credit courses completed
- Technical skills/competencies attained
- End-of-course testing results
- Grades
- High school graduation date (month & year)
- Transition: postsecondary school and/or traditional apprenticeship
- Diploma/degree/certificate attainment (secondary and postsecondary)
- Job placement data
- Wage data

**YA/WBL Student Data:** Student Social Security numbers and career focus are required for DWE to track students and obtain demographic, special populations, etc., data. **This is a mandatory item for accountability and funding.**

### **TAX INCENTIVE FOR EMPLOYERS**

Two Arkansas laws provide tax incentives for a taxpayer who employs a youth apprentice in a U.S. Department of Labor/Bureau of Apprenticeship and Training (USDOL/BAT) registered program and/or in an Arkansas Department of Workforce Education/State Apprenticeship Office (DWE/SAO) approved program. These are Act 1103 of 1995 and Act 1168 of 1997, respectively. A credit in the amount of \$2,000 or ten percent of the wages earned by the youth apprentice, whichever is less, shall be allowed against the tax imposed by the Arkansas Income Tax Act. For each new student, the following must be submitted to the DWE at least 30 days prior to the date that the student begins work in an apprentice position for which the eligible employer may claim a tax credit: copy of the Career Focus Program of Study, copy of the Structured Work-based Learning Plan, and Status of Apprentice Form.

#### **Programs not Registered with BAT**

At the end of each tax year, the eligible employer submits form DWE-YAP, the apprentice's W-2 form, and a detailed schedule by pay period of wages to the Office of School Improvement (DWE) before tax credit may be claimed.

Wages paid prior to approval of the program or after the end of the student's participation in the approved program shall not qualify for credit. Also, wages paid to employees after they are disqualified pursuant to the terms of the approved apprenticeship program shall not qualify for credit.

#### **Programs Registered with BAT**

To receive tax credit information for students ages 17-21 and participating in programs registered with BAT, employers should contact

U.S. Department of Labor  
Employment and Training Administration  
Bureau of Apprenticeship & Training  
700 W. Capitol, Room 3507  
Little Rock, AR 72201  
(501) 324-5415

## APPENDIX A

### THE YA/WBL ACT OF 1991

#### 6-50-501. Title.

This subchapter may be cited as the "Arkansas Youth Apprenticeship/Work-Based Learning Act of 1991".

**History.** Acts 1991, No. 546, § 1; 1991, No. 553, § 1.

#### 6-50-502. Legislative findings.

Whereas workplace changes have profoundly altered and increased the skills required of workers and managers; and

Whereas schools are struggling to improve the basic skills of the school age population drawn increasingly from "at risk" households where children tend to leave school early; and

Whereas many noncollege-bound youth, especially women and minorities, spend their first years after high school unemployed or job-hopping from one low-skills job to another, with a consequent loss in productivity and access to career-oriented learning; and

Whereas most new jobs that will be created in the 1990's will require some postsecondary education; and

Whereas the economic position of "The Forgotten Half" - noncollege-bound high school graduates - is deteriorating, with real earnings declining by twenty-eight percent (28%) from 1973 to 1986, while the earnings of college graduates have risen; and

Whereas most employers in the United States lack a tradition of strong employee training;

Now, therefore, the State of Arkansas has determined that the establishment of a youth apprenticeship program can contribute significantly to addressing these problems by providing Arkansas' noncollege-bound young people with additional opportunities to develop meaningful job skills.

**History.** Acts 1991, No. 546, § 1; 1991, No. 553, § 1.

#### 6-50-503. Establishment of program.

(a) The Department of Workforce Education is hereby authorized and directed to develop and implement a youth apprenticeship/work-based learning program to provide additional educational and training opportunities for noncollege-bound Arkansas high school students.

(b) The program should be based on the following fundamental principles:

(1) Strong employer commitment and involvement;

(2) Taking young people at the end of the tenth grade through a three-year to four-year process connecting high school and the first year or two (2) of postsecondary learning;

(3) Providing high-quality supervised learning opportunities for students at the work site;

- (4) Integrating academic and vocational teaching and learning in the classroom and at work;
- (5) Fostering interactive, team based learning in the classroom;
- (6) Including curriculum on all aspects of the industry;
- (7) Using competency-based measures for evaluating student progress;
- (8) Providing both academic and occupational credentials;
- (9) Providing access and supports to nontraditional groups; and
- (10) Explicitly addressing issues presented by diversity in society and the workplace.

(c) The industries and occupations selected for this program must offer entry-level jobs with good opportunities for career advancement into high-skill, high-wage jobs. The department, the State Apprenticeship Coordination Steering Committee, and local sites will take joint responsibility for identifying these industries and occupations. The State Apprenticeship Coordination Steering Committee will take responsibility for identifying traditional apprenticeship programs that are currently in place.

**History.** Acts 1991, No. 546, § 1; 1991, No. 553, § 1.

6-50-504. Demonstration programs.

- (a) The Department of Workforce Education shall implement during the 1991-1993 biennium at least five (5) demonstration youth apprenticeship programs.
- (b) In designing and implementing these programs, the department shall require the selected demonstration projects to make a five-year commitment to the program's effective implementation and to match state funding with commitments from local participants, including employers and unions, high schools, technical institutes or vocational-technical schools, community colleges, technical colleges, and other appropriate entities.
- (c) State funding for the demonstration projects shall be from funds appropriated by the General Assembly to the department for that purpose.
- (d) The State Board of Workforce Education and Career Opportunities shall be the sole state agency to award funding for the demonstration youth apprenticeship programs established and authorized by this subchapter.

**History.** Acts 1991, No. 546, § 1; 1991, No. 553, § 1; 1991, No. 1244, § 28; 1991, No. 1246, § 3; 1999, No. 1323, § 30.

6-50-505. Waiver of regulations - Articulation agreements - Duties of State Board of Workforce Education and Career Opportunities.

- (a) The State Board of Workforce Education and Career Opportunities may provide waivers of regulations adopted by the Department of Workforce Education when waivers are necessary to accomplish the purposes of this subchapter so long as the waivers will not weaken the quality of the educational opportunities provided.
- (b)(1) The department shall also take the lead role in seeking the establishment of articulation agreements between high schools, technical institutes or vocational-technical schools, and institutions of higher education, with a goal of eliminating barriers to lifelong learning.

(2) The resulting articulation agreements will need to be approved by the appropriate local and state boards of the participating school districts, postsecondary technical institutes or vocational-technical schools, and institutions of higher education.

(c) The board is authorized to promulgate rules and regulations for the implementation of the program established by this subchapter.

**History.** Acts 1991, No. 546, § 1; 1991, No. 553, § 1; 1999, No. 1323, § 31.

## **APPENDIX B**

### **ARKANSAS DEPARTMENT OF WORKFORCE EDUCATION**

#### **RULES AND REGULATIONS ASSOCIATED WITH EMPLOYER INCOME TAX CREDITS FOR YOUTH APPRENTICESHIP/WORK-BASED LEARNING PROGRAMS UNDER ACT 1168 OF 1997**

##### **1.00 REGULATORY AUTHORITY**

- 1.01 These regulations shall be known as the rules and regulations pertaining to tax credits for youth apprenticeship/work-based learning programs that are not registered with the Bureau of Apprenticeship and Training.
- 1.02 Sections 2.00 through 5.00 of these regulations are promulgated pursuant to the State Board of Workforce Education and Career Opportunities' authority under Arkansas Code Annotated 6-51-213 and Section 1 of Act 1168 of 1997 to set forth the criteria by which the Department of Workforce Education may qualify/certify eligible programs.
- 1.03 Sections 6.00 through 9.00 are promulgated by the Department of Finance and Administration pursuant to Section 6 of Act 1168 of 1997 in order to carry out the purposes of this act.

##### **2.00 PURPOSE**

- 2.01 It is the purpose of these regulations to establish the rules and criteria for approving programs/occupations that meet the intent of Act 1168 of 1997 and to set forth the procedure that employers must follow to be eligible for the tax credit. Only those youth apprenticeship/work-based learning programs not in occupations that are covered by Title 29, Subtitle (a), Part 29 of the Code of Federal Regulations shall be included in these regulations. In addition, only those youth apprenticeship/work-based learning programs desiring to be approved to allow participating taxpayers/employers to be eligible for the income tax credit shall be subject to the rules and regulations.

##### **3.00 DEFINITIONS**

- 3.01 "Eligible employer" means a taxpayer that employs a student in an apprenticeship/work-based learning program which meets the standards of program design for nationally recognized curriculum and/or business and industry or trade association standards; which is not in an occupation eligible for registration as provided in Title 29, Subtitle (a), Part 29 of the Code of Federal Regulations, as in effect on January 1, 1995; and which has been approved by the Arkansas Department of Workforce Education.
- 3.02 "Structured plan for student learning" means a written document developed by the instructor and workplace mentor that outlines the individual student's learning in the workplace with progressively higher levels of work experience accompanied by training and mentoring along with wage progression; identifies work placements by the employer that engage the student in all aspects of the industry through job rotations and in structured learning opportunities that meet program/career learning objectives; and clarifies the legal rights, responsibilities, and liabilities of the partners. This plan must be signed by the employer, instructor, and student before the student begins the apprentice position with the employer.
- 3.03 "Youth apprentice" means an individual between the ages of sixteen (16) and twenty-one (21) who is enrolled in a public or private secondary or postsecondary school.

#### 4.00 APPROVAL OF APPRENTICESHIP/WORK-BASED LEARNING PROGRAMS

- 4.01 Educational institutions requesting a youth apprenticeship/work-based learning program to become approved under these rules and regulations must submit a written plan to the ADWE that includes the following information/documentation. Such plan shall be submitted not less than 60 days prior to the requested approval date. EXCEPTION: For institutions requesting approval for programs during the first three months of 1998, the Department shall work to ensure that those requests are approved as soon as possible without regard to the 60-day rule.
- 4.01.1 Assurance that the participating students will be enrolled in the appropriate related career major with a work-based learning component.
- 4.01.2 Documentation that the standards of the program design are nationally recognized by business and industry and/or trade associations and that the program has support by appropriate business and industry and/or trade associations in this state.
- 4.01.3 Description and sample of the written structured plan for the students' learning in the workplace.
- 4.01.4 The program and student progress evaluation process.
- 4.01.5 Assurance that participating students will work a minimum of 270 hours per semester (or 540 hours per school year distributed appropriately through out the year).
- 4.02 The appropriate program manager of the ADWE shall review the written plan/documentation and provide technical assistance if necessary.
- 4.03 Final approval of each tax credit eligible program shall be by the Associate Director for Instructional Programs.

#### 5.00 APPROVAL/CERTIFICATION OF PARTICIPATING STUDENTS INTO AN APPROVED PROGRAM

- 5.01 For each new participating student, the following information/documentation must be submitted to the ADWE at least 30 days prior to the date that the student begins work in an apprentice position for which the eligible employer may claim a tax credit. EXCEPTION: For institutions requesting approval for participating students during the first three months of 1998, the Department shall work to ensure that those requests are approved as soon as possible without regard to the 30-day rule.
- 5.01.1 A copy of each participating student's four- to six-year career action plan (at least two years of secondary school preceding graduation and one or two years of postsecondary education) in the appropriate related career major with a work-based learning component and that is signed by the student, parent, and teacher.
- 5.01.2 A signed copy of the structured plan for student learning.
- 5.01.3 A Status of Apprentice Form for each student.



- 5.02 The instructor shall submit an Apprentice Status Form in the event an apprentice changes employers; completes or withdraws from the apprenticeship program; or for any other reason, is no longer participating in the program.

## 6.00 INCOME TAX CREDIT

- 6.01 At the end of each tax year, the eligible employer shall submit the following documentation to the ADWE:

6.01.1 The prescribed form (ADWE-YAP) which shall be sent by the Department of Workforce Education to all approved programs for distribution to eligible employers. Such form shall require information that includes the apprentice's wages and the period of time worked;

6.01.2 A copy of the W-2 for each youth apprentice for which the tax credit is claimed; and

6.01.3 A detailed schedule by pay period of wages.

- 6.02 Wages paid prior to approval of the program or after the end of the student's participation in the approved program shall not qualify for credit. Also, wages paid to employees after they are disqualified pursuant to the terms of the approved apprenticeship program shall not qualify for the credit.

- 6.03 An eligible taxpayer who trains a youth apprentice shall be entitled to the tax credit even though the apprentice receives his or her wages for training from a 501(c)(3) corporation.

- 6.04 The appropriate program manager and the Associate Director for Instructional Programs shall certify to the Department of Finance and Administration that the eligible taxpayer has met all the requirements and qualifications for the tax credit. The certification shall include the total amount of wages paid to each youth apprentice employed by the taxpayer during the taxable year in which the taxpayer is claiming the credit.

## 7.00 AMOUNT OF TAX CREDIT

- 7.01 The taxpayer shall be allowed a credit equal to ten percent (10%) of the certified wages earned by a youth apprentice or two thousand dollars (\$2,000), whichever is less.

- 7.02 The Department of Finance and Administration shall issue the taxpayer an Income Tax Credit Memorandum based on the certified wages.

- 7.03 Separate credit memos will be issued for each tax year in which the taxpayer has paid certified wages, but in not event will more than a cumulative total of \$2,000 be allowed per youth apprentice.

## 8.00 USE OF CREDIT

- 8.01 In order for the taxpayer to use the credit, the Income Tax Credit Memorandum must be attached to the income tax return in which the credit is first claimed.

- 8.02 The amount of credit that may be used by a taxpayer for any taxable year shall not exceed the amount of individual or corporate income tax otherwise due.

- 8.03 Regardless of whether or not the credit is used for the tax year in which it was earned, any unused credit may be carried over only for a maximum of two (2) consecutive taxable years.

- 8.04 If the Business is an S corporation, the pass-through provisions of Arkansas Code Annotated §26-51-409, as in effect for the taxable year the credit is earned, shall be applicable.
- 8.05 A partner's or member's distributive share of the credit shall be determined by the partnership or limited liability company agreement unless the agreement does not have substantial economic effect or does not provide for the allocation of credits. If the agreement does not have substantial economic effect or does not provide for the allocation of the credit, the credit shall be allocated according to the partner's or member's interest in the partnership, pursuant to Federal Internal Revenue Code section 704(B), as in effect on January 1, 1995.

#### 9.00 EFFECTIVE DATE

- 9.01 The tax credit provided under this act shall apply to taxable years beginning January 1, 1998, and all taxable years thereafter.

## OFFICE OF SUPPORT FOR SPECIAL POPULATIONS

### STATE STAFF

Office of Support for Special Populations

Room 401 (501) 682-1800

Fax: (501) 682-1805

Program Manager

E-mail:

### SPECIAL POPULATIONS – SPECIAL NEEDS STUDENTS

Definitions and policies related to serving students who are members of “special populations” (special needs) must be in compliance with the Carl D. Perkins Vocational and Technical Education Act of 1998 (Public Law 105.332) or its successor.

The term “special populations” includes individuals with disabilities, educationally and economically disadvantaged individuals (including foster children), individuals of limited English proficiency, individuals who participate in programs designed to eliminate sex bias, and individuals in correctional institutions.

Each student identified as disabled and/or handicapped under the guidelines of the Special Education Section of ADE and admitted to career and technical education program(s) must have an Individualized Education Plan (IEP) developed prior to placement in the program.

Each student who meets the criteria for identification as a member of special populations shall be provided with the vocational assessment, guidance, counseling, and career development in order to ensure his/her success in the career focus program of study.

Transition services as well as supplemental/support services shall be provided as needed to assist the student in making the transition from school to employment.

### JAG

(Jobs for Arkansas' Graduates)

#### Course Description

Jobs for Arkansas' Graduates is a new course that is designed to assist career and technical students whose ability to successfully graduate from high school and obtain meaningful employment is in jeopardy.

#### Course Type

Jobs for Arkansas' Graduates can be utilized in any program of study and can count as credit toward a student's career focus/major. The course's goal is to ensure students' graduation (or GED) and prepare them for workplace success whether their career begins immediately upon high school graduation, entails entry into military service, or requires postsecondary education/training.

## Length of Course

Jobs for Arkansas' Graduates is designed as a one-year (senior school-to-career application) or as a two-year (multiyear dropout-prevention application) course.

## Eligibility of Students

Eleventh- and 12<sup>th</sup>-grade career and technical students with multiple identified barriers shall apply for acceptance to the JAG course. The specialist identifies a student's barriers prior to placement into the course. Students are to have an identified career focus/major and have completed at least one unit and be enrolled in the second unit of the identified career focus/major.

## Course Credits

One unit of credit per year is to be given for JAG participants. A student's maximum length of enrollment in the JAG course shall be two years, depending on the application of the model. JAG may be utilized as a related option of any program of study. It is not a stand-alone program of study or career focus/major.

Part-time employment is not a requirement of the JAG course, but credit can be given at the discretion of the individual school district. Schools that grant credit for work-based learning shall follow the course credit guidelines for the internship course.

## Student Organization

While National Jobs for America's Graduates' asks that elements of its career association, National Career Association (NCA), be included in the curriculum, Arkansas JAG specialists will provide support to the students and advisors in the students' career focus career and technical student organization (CTSO). JAG students are strongly encouraged to hold membership in the student organization that represents their chosen career focus/major area. The specialists will assist the JAG students in the activities of their chosen CTSO. The NCA activities will be utilized as classroom management tools.

## Courses Offered

Course Code	Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
493800	JAG Apprenticeship/Work-Based Learning	1					X	X
493780	JAG I	1					X	X
493790	JAG II	1					X	X

## PROVE

(Providing Real Opportunities for Vocational Education)

## Course Description

This secondary course is individualized to meet the specific academic needs of career and technical students who are members of a special population. This course provides a versatile spectrum of instruction with the intent of improving vocational and academic scores and/or skills. Student eligibility is to be discussed with the student, parents, PROVE instructor, and/or counselor prior to enrollment.

## Teacher Qualifications

The PROVE instructor is to be secondary licensed in any vocational area or hold certification in special education or reading, math, or language arts and be endorsed through the completion of program management training developed and approved by the Department of Workforce Education.

Existing CCVE instructors with teaching certificates may “grandfather” as PROVE instructors by completing the designated program management training.

## Course Type

PROVE is a recommended course for students in the ninth and/or tenth grades in secondary schools, who are academically disadvantaged and/or are limited English proficient. It is a course of basic instruction based on identified student needs. Instruction will include the areas of math, reading, language arts, and life skills. The basic skills instruction shall be related to the vocational program of study/career focus in which the student is or will be enrolled. The administration of a pre- and post-assessment tool (TABE) is required of all students. Documentation of student achievement is required.

## Length of Course

PROVE is designed to meet the individual needs of the student. It is recommended as a one-year course.

## Eligibility of Students

Students who are members of the special population are defined as students who score between the 15<sup>th</sup>-35<sup>th</sup> percentile on standardized tests in reading, mathematics, or language arts or students of limited English proficiency (LEP). This ninth- or tenth-grade student is or will be enrolled in a vocational program or study/career focus. Student eligibility shall be discussed with the student, parents, PROVE instructor, and/or counselor prior to enrollment.

## Course Credits

It is recommended that a student may earn the equivalent of one unit of credit per year for the successful completion of the PROVE course. This course will not count as a credit toward a student’s career focus major.

## **STRIVE**

(Students and Teachers Responsibly Integrating Vocational Education)

## Course Description

STRIVE is a secondary course that integrates academics with a student’s selected career and technical education course of study. This course provides a versatile spectrum of instruction with the intent of improving the knowledge and skills of both vocational and academic competencies. Student eligibility is based on an application process and is to be discussed with the student, parents, STRIVE instructor, and/or counselor prior to enrollment.

## Course Type

STRIVE is a recommended course for students, in the ninth and/or tenth grades in secondary schools, who have identified barriers. Instruction will include integrated areas of career and technical education and academic skills. The instruction shall be related to the vocational program of study/career focus in which the student is or will be enrolled. The administration of a pre- and post-assessment tool (TABE) is required of all students. Documentation of student achievement is required.

#### Length of Course

STRIVE is recommended as a one-year course.

#### Eligibility of Students

Ninth- and tenth-grade career and technical students or potential career and technical students with multiple identified barriers shall apply for acceptance to the STRIVE course. The instructor identifies a student's barriers prior to placement into the course. This ninth- or tenth-grade student is or will be enrolled in a vocational program or study/career focus. Student eligibility shall be discussed with the student, parents, STRIVE instructor, and/or counselor prior to enrollment.

#### Course Credits

It is recommended that a student may earn the equivalent of one unit of credit per year for the successful completion of the STRIVE course. This course will not count as a credit toward a student's career focus major.

Course Code	Electives	Units of Credit	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
690030	PROVE/STRIVE	1			X	X		

## SUPPORT FOR SPECIAL POPULATIONS

JAG  
(Jobs for Arkansas' Graduates)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE (15, 20, or 25 students)

(2005-2006)

Item Name	Count	Specification/Description
Microcomputers	1 per 3 students	See Technology Standards
Laptop microcomputer	1 per specialist	See Technology Standards
Printer for classroom	1	
Telephone/fax/answer machine & jack for office	1	Newest technology
Office desk	1	30" x 60", sturdy, metal or wood
Office chairs	1-3	On casters
Data station	1 per computer	Minimum of 30" x 42" per station (keyboard height 26"-28")
Computer chairs	1 per computer	Strong, durable, ergonomically designed w/strong back support (25 percent must be adjustable)
Multipurpose tables	3	24" x 48", sturdy, wood
Cassette/CD player-recorder	1	Newest technology
Locking storage cabinet	1	3' x 6' x 2'
Photocopier, video camera		Easy access to
TV/VCR/DVD	1	Minimum 25" monitor, 3-speed recording/playback
A-V cart/media storage center	1	
Overhead projector w/movable stand & screen	1	14" standard lens or 12' wide angle lens, 8' x 10' screen
Filing cabinets	1	4-drawer, lockable

## SUPPORT FOR SPECIAL POPULATIONS

JAG  
(Jobs for Arkansas' Graduates)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

(2006-2007)

Item Name	Student Count			Description/Specification
	15	20	25	
Microcomputers	5	7	9	See Technology Standards – Level 1
Laptop microcomputer	1	1	1	Newest technology
Printer for classroom	1	1	1	
Telephone/FAX/answer machine & jack for office	1	1	1	Newest technology
Office desk	1	1	1	30" x 60", sturdy, metal or wood
Office chairs	1-3	1-3	1-3	On casters
Data station	5	7	9	Minimum of 30" x 42" per station (keyboard height 26"-28")
Computer chairs	5	7	9	Strong, durable, ergonomically designed with strong back support (25 percent must be adjustable)
Multipurpose tables	3	3	3	24" x 48", sturdy, wood
Locking storage cabinet	1	1	1	3' x 6' x 2'
Photocopier, video camera				Easy access to
TV/VCR/DVD player/recorder	1	1	1	Minimum 25" monitor; 3-speed recording/playback
A-V cart/media storage center	1	1	1	
Visualizer/digital demonstration camera	1	1	1	Lens 10x, auto/manual focus
Filing cabinets	1	1	1	4-drawer, lockable
Docking station for laptops	1	1	1	Appropriate for laptop
LCD projector	1	1	1	Newest technology
Scanner	1	1	1	Newest technology
8' x 10' screen				Access to



## SUPPORT FOR SPECIAL POPULATIONS

PROVE  
(Providing Real Opportunities for Vocational Education)

### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

(15, 20, or 25 students)

Item Name	Count	Specification/Description
Microcomputers	1 per 2 students	See Technology Standards
Printer for classroom	1	
Data stations	1 per computer	Minimum of 30" x 42" per station (keyboard height 26"-28")
Computer chairs	1 per computer	Strong, durable, ergonomically designed w/strong back support (25 percent must be adjustable)
Multipurpose tables	2	24" x 28", sturdy, wood
Locking storage cabinet	1	3' x 6' x 2'
Photocopier, video camera		Easy access to
TV/VCR/DVD	1	Minimum 25" monitor, 3-speed recording/playback
Overhead projector w/movable stand & screen	1	14" standard lens or 12' wide angle lens, 8' x 10' screen
A-V cart/media storage center	1	
Filing cabinets	1	4-drawer, lockable
TABE software	1	For appropriate TABE test administration/interpretation
Optical mark reader	1	48 x 108 marks; 2,200 forms/hour; reflective read; 2 read heads; 40-48 read head channels; 512 KB memory; RX-232C serial interface; built-in form translation software

## SUPPORT FOR SPECIAL POPULATIONS

### STRIVE

(Students and Teachers Responsibly Integrating Vocational Education)

#### MINIMUM INSTRUCTIONAL EQUIPMENT AND SOFTWARE

(15, 20, or 25 students)

Item Name	Count	Specification/Description
Microcomputers	1 per 2 students	See Technology Standards
Printer for classroom	1	
Data stations	1 per computer	Minimum of 30" x 42" per station (keyboard height 26"-28")
Computer chairs	1 per computer	Strong, durable, ergonomically designed w/strong back support (25 percent must be adjustable)
Multipurpose tables	2	24" x 28", sturdy, wood
Locking storage cabinet	1	3' x 6' x 2'
Photocopier, video camera		Easy access to
TV/VCR/DVD	1	Minimum 25" monitor, 3-speed recording/playback
Overhead projector w/movable stand & screen	1	14" standard lens or 12' wide angle lens, 8' x 10' screen
A-V cart/media storage center	1	
Filing cabinets	1	4-drawer, lockable
TABE software	1	For appropriate TABE test administration/interpretation
Optical mark reader	1	48 x 108 marks; 2,200 forms/hour; reflective read; 2 read heads; 40-48 read head channels; 512 KB memory; RS-232C serial interface; built-in form translation software
TABE test booklets		Version 9/10 Locator & Survey Tests